Air Live ®

Powered by OvisLink Corp.

2008

Product Guide

Network Technologies Overview

15 years
Air Live ®
Powered by Ovislink Corp.
1993 - 2008

Information and Disclaimer:

Table of Content

This catalogue is written to provide a comprehensive overview of AirLive products and the latest networking technologies. If you encounter an unfamiliar network term, please refer to our Network Glossary section at the end of this catalogue for details.

Legend Guide

Pages indicated by this icon provide information on the latest Networking Technologies.

00 This sign means the page number. You can refer to the page to find the product.

PR This sign indicates pre-released products that are not yet formally released before the catalog finished. Please refer to our website for the latest update.

Wireless LAN
Wireless Outdoor
Broadband
Multimedia
Ethernet Products
Security Products
Powerline
VoIP

Company Introduction

The manufacturer of AirLive™ products, OvisLink Corp. was founded in 1993 in Taiwan by a group of industrial experts who set out to provide the best combination of quality, service, technology and value in the industry. Today, OvisLink Corp. is an international corporation, total networking solution provider with over 200 products and with hundreds of distributors around the world.

Our industry technology leadership is indisputable. OvisLink Corp. was the first company in Taiwan to introduce Fast-Ethernet NICs and Switches when IEEE 802.3u standard was established in 1996. Moreover, OvisLink Corp. entered the WLAN market in 2001 with the AirLive™ series and became the major provider of wireless solutions. In 2004, Our WMU-9000VPN multimedia router won the Best of Computex award for its excellent multi-function capability. When you choose us as a partner, you can be sure that we will provide you with the latest innovative solutions.

AirLive™ is a brand providing Innovation, Solutions, Reliability and Technology. AirLive's R&D department continuously focuses its efforts on developing the right products including AirLive™ WISP and Outdoor solutions, AirLive™ SMB and Security solutions and AirLive™ Small Office and Home products.

These products represent brilliant value for enterprises, business professionals, Internet Service Providers, small businesses and consumers because of their outstanding price/performance ratio.

Company Profile

AirLive™ provides strong marketing support including aggressive marketing programs, strong marketing communication, unified design of all materials, road shows and technical seminars, exhibitions, catalogues and brochures and many individual and global programs. AirLive's brand awareness is growing continuously and our measure of success is not quantified just in numbers, but the long terms growth of business and partnership. We provide our partners years of networking experiences and strong support to customers.

Sky Club

Join The AirLive Family

Brand Core Value

The AirLive™ team treats customers as real friends offering trust and providing high quality products and advanced technical support to build long-term partnership.

High Quality

AirLive™ commits to delivering only the highest quality products to our partners.

Professional Support

AirLive™ is a professional networking brand and its team is committed to advanced technology and outstanding sales and marketing support.

Reliable Partnership

AirLive™ team members work with partners and build up long term relationships and friendships.

Phoenix Partner

Eagle Partner

Falcon Partner
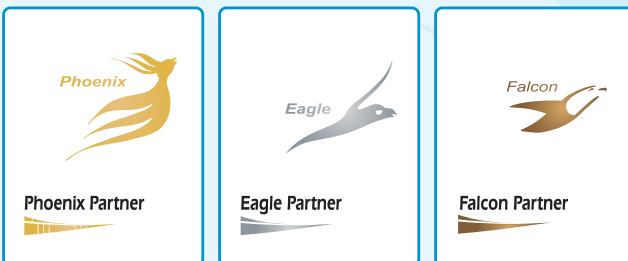
Brand Icon

AirLive™ is a worldwide brand for Networking & Data Communication equipment. Our LAN products provide professional solutions in all areas. Our WLAN products offer you an enjoyable and hi-tech experience. The full range of AirLive™ products makes your life more efficient and convenient. AirLive™ - It just works better.

Brand Message

AirLive™ products are just like your good friends you can trust and they can help you in your daily life.

"Reliable, Simple yet Powerful Networking"

shows that our products are easy to use and are becoming more and more popular.

AirLive In Our Life

Brand Personality

AirLive™ brand personality stands for professionalism, warmth, hard work, confidence and competitiveness. The brand is global and grounded yet moderately upscale. It is the brand for all ages.

Membership program

The AirLive™ SkyClub partner program provides Ovislink Corp. partners information, training, support, examples and tools to grow their networking business, to access to new leading technologies and solutions and maximize profitability and qualification. The AirLive™ SkyClub is focused on developing solid partnerships with select AirLive™ partners that recognize the benefits of partnering with networking technology leader Ovislink Corp. and have the interest to succeed together.

Air Live ®
Powered by OvisLink Corp.

Home Networking Environment

The following diagram illustrates a typical home networking environment that is built without any network cabling. The purpose of the network is to deliver Internet service and wireless audio throughout the household. Three wireless networking technologies are used to make the configuration possible.

WiFi

WiFi is also known as the Wireless LAN (WLAN). Wireless LAN is used for connections between computers and the broadband Internet connection. For product and technologies about WiFi, please read the Wireless LAN section of this catalog on page 6.

Bluetooth ®

Bluetooth is a PAN (Personal Area Network) technology developed for communication between electronic equipment, mobile phone, and PCs. Because of its low power consumption, it is very suitable for portable multimedia application. The latest Bluetooth audio technology provides Hi-Fi Stereo sound wirelessly. For product and technologies about Bluetooth, please read the Bluetooth section of this catalog on page 46.

HomePlug

Homeplug is also known as the PowerLine technology. The powerline devices use electricity circuit inside a building for transmission data, therefore, there is no need for network cable. If your home has more than one floor or have many brick walls, the Homeplug is a perfect companion for bridging WiFi network together. The current Homeplug Turbo Standard supports 85Mbps of transmission speed. For product and technologies about Homeplug, please read the Homeplug-Powerline section of this catalog on page 70.

Home-2F

Hall Way
HP-2000E
85Mbps PowerLine Bridge
WL-5460AP
Wireless G AP

Master Room
NoteBook
AirTV-1000U
DVB-T USB Receiver
Sky-211
Phone

Master Room
WMU-6500FS
File Download From Internet

Wireless Skype

Children Room
WN-5000PCI
11N PCI Adapter
PC

Children Room
Skype Network
USB dongle
Handset

Home-1F

Living Room
TV
Internet
MU-7000AVs
Play and Share Video file on TV!
Wireless Router

Living Room
HP-2000E
85Mbps PowerLine Bridge
WT-2000ARM
Turbo-G ADSL Router
VoIP-111A
Internet
Phone

Study Room
WFP-101U
Printer
Wireless Multi-function Print Server

Study Room
WT-2000PCI
Turbo-G Adapter
PC

Office Networking Environment

In an office environment, security and performance are the primary concern when building a network. The following diagram illustrates a typical office environment that has the following networking requirements:

- Providing high-speed Internet connections, having 2 broadband sources for backup redundancy.
- A security firewall and VPN connections for remote office or outside workers.
- Wireless LAN access for notebook users. High level of wireless security required.
- High speed 1000Mbps Ethernet connection for servers.
- Video Surveillance with recording function.
- VoIP connection to remote offices for reducing telephone charges.
- The ability to let R&D engineers controlling several PCs.

The following network technology are employed in this example office:

Security Products

Security products include firewalls, Multi-WAN gateways, Hotspot gateways, Email Server, and Internet Activity Monitor. Security products not only protect your network from outside intruders, they also provide precise control over the each user's network access right. For more information about security products, please read the Security section of this catalog on page 60.

ADSL

ADSL is a technology that uses your existing telephone wiring system to provide high speed Internet connection. Since it is asynchronous, the upstream and downstream speed can be different. The newer ADSL2/2+ standard allows maximum downstream speed up to 24Mbps. For more information about ADSL, please read the Broadband Communication-ADSL section of this catalog on page 32.

VoIP

VoIP is a technology that allows the voice communication to carry out on Internet network. VoIP uses voice compression technology to convert analogue sound into network packets. Enterprise customers can build VoIP networks between branch offices to reduce telephone costs. For more information about VoIP, please read the VoIP section of this catalog on page 72.

Projector Server

The Video Projector Server puts the contents of your presentation on the projection screen wirelessly. You can switch presenter on the fly instantly. It is an indispensable device for any company's meeting room. For more information about AirLive multimedia video device, please read the Multimedia section of this catalog on page 45.

Meeting Room
AirVideo-2000 — Wireless Projector Server
Video Projector / Beamer

7
ES-4000 — Email Server Appliance

Equipment Room
ADSL Line 1 — ARM-204 ADSL Modem
ADSL Line 2 — ARM-204 ADSL Modem
7 File Server
RS-3000 — Office UTM Gateway
6
Gigabit
Gigabit
Video Server
SNMP-FSH2602MG 24+2G SNMP Switch

6 VoIP
VoIP-120A
Ethernet
RJ-11 — RJ-11
Phone — Fax

WALLS
WL-5420CAM — Wireless G IP Camera

Office
WL-5470AP — Wireless G AP with POE

Office

Office
PC — GE-2032R Gigabit Ethernet Adapter

Office
Printer Printer Printer
P-203N — 3-Port Print Server

Believe in the Wireless Experts

Wi Fi ALLIANCE

AirLive™ is one of the most recognized brands for wireless LAN equipment. Around the world, hundreds of thousand wireless broadband subscribers are using our equipment for a simple reason - reliability and performance. Unlike competitions whose research and development is concentrating on pursuing perpetual down cost with compromising components, OvisLink Corp. has always insist on using high quality components that can withstand the test of time and environment extreme. As a Wi-Fi alliance member, we are always up to date with the latest technologies and solutions. Today, OvisLink Corp. provides the widest range of wireless equipments in the industry. From our legendary mult-function Access Point to the new Wireless-N and MESH equipment, or the Multimedia IP camera and wireless hard drive. You will be satisfied with our product range and solutions. If you are still unsure about which wireless partner you should choose, put your faith in AirLive - the Wireless Expert.

Wireless Specification Table

(Detailed product specification matrix — Wireless LAN Cards, Wireless AP, Wireless Router, Wireless Multimedia, Wireless IPCAM, Wireless Print Server — with columns for Hardware, Interface, Operating Mode, AP Feature, Router Feature, Printer, Camera, Extra.)

● Yes   S Super G mode   T Turbo G Mode   G+ 802.11G+ Mode   ▲ WAN and LAN are the same port

* For explanation of networking terms. Please refer to the Network Glossary section of this catalogue.

Building a Wireless Network

The following guide is to help you understand how to build a basic wireless network in a home or office environment. In addition to the information below, we also recommend reading the Network Glossary section of this guide for better understanding. There are 2 different topologies for building a wireless network:

Adhoc

An Adhoc wireless network do not use wireless AP or router as the central hub of the network. Instead, wireless client are connected directly to each other. Since there is no Ethernet interface to uplink other network devices, it is difficult to share network service such as Internet connection. Adhoc is not recommended except for quick exchange of files between 2 PCs.

WLAN PCI

WLAN USB

Infrastructure

A wireless network that is built around one or more access points, providing wireless clients access to wired LAN or Internet service. It is the most popular WLAN network structure today.

WLAN Print Server

WLAN USB

Wireless AP
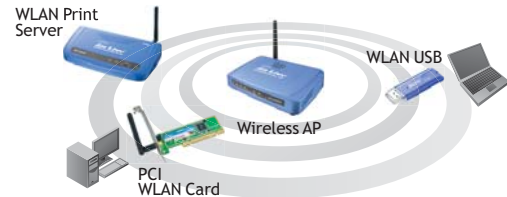
PCI WLAN Card

To build a WLAN network, you need the following equipment:

Wireless LAN card

The wireless network card connects to your PC, Notebook or PDA to transmit and receive data from the Access Point. The WLAN cards comes in different form factors.

PCI Adapter

For your desktop PC, PCI adapter typically comes with an antenna connector that can be upgrade to higher gain antenna. Since it is more difficult to remove than USB, therefore, more secure for office or school environment.

Cardbus Adapter

For your notebook's Cardbus slot. The advantage of Cardbus solution is it can stay inside the cardbus slot of your notebook.

USB Adapter

For any PC or Notebook with USB port. The advantage of USB solution is the portability and easy installation.

Wireless AP

Wireless Access Point is the center of the infrastructure network. It is a wireless hub that acts as the center for all the wireless traffic. AP typically has an Ethernet port for connection to other network device such as broadband routers or ADSL modems. The AP is also available in the following variations.

Wireless Router

A combination of Wireless AP + Broad Router to allow users sharing an Internet connection.

Wireless ADSL Router

A combination of Wireless AP + Broad Router + ADSL to allow users sharing an ADSL connection.
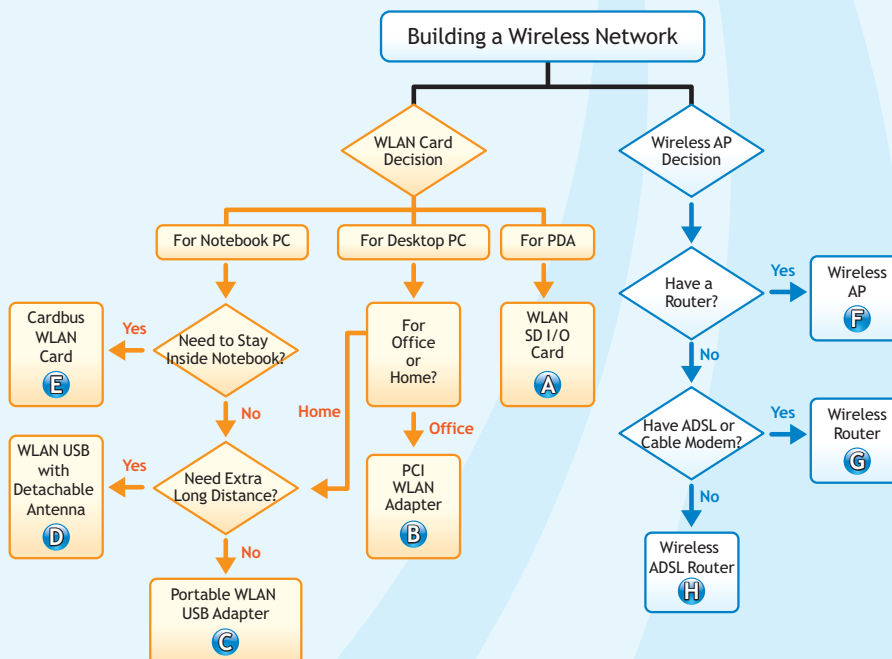
Recommended Products

Model	Description	Page No.
Ⓐ WLAN SD I/O Card		
WL-1100SD	802.11b SD WLAN Card	⑱
Ⓑ WLAN PCI Adapter		
WN-5000PCI v2	802.11n PCI Adapter	⑪
WT-2000PCI	Turbo-G PCI Adapter	⑮
WMM-3000PCI	MIMO-G PCI Adapter	⑭
Ⓒ WLAN USB Adapter		
WN-5000USB v2	802.11n USB Adapter	⑪
WT-2000USB	Turbo-G USB Adapter	⑮
Ⓓ WLAN USB with Detachable Antenna		
WL-5480USB	802.11g USB + Antenna	⑱
Ⓔ WLAN Cardbus Adapter		
WMM-3000PCM	MIMO-G PCM Adapter	⑭
Ⓕ Wireless AP		
WLA-5000AP v3	802.11a/b/g Wireless AP	⑫
WLA-5200AP	802.11a/b/g Wireless AP	⑫
WL-5450AP	802.11g Wireless AP	⑯
WL-5460AP v2	802.11g Multi-mode AP	⑯
WL-5470AP	802.11g 5-Port AP	⑯
WL-5470POE	802.11g POE AP	⑯
WL-9000AP	Dual Radio Dual Band 108 Mbps AP	⑬
WMM-3000AP	MIMO-G AP	⑭
WT-2000AP	Turbo-G AP	⑮
WMU-6000FS	11g Wireless HD	⑲
WMU-6500FS	Turbo-G Wireless HD + BT Download Agent	㉗
Ⓖ Wireless Router		
WT-2000R	Turbo-G Router	⑮
WMM-3000R	MIMO-G Router	⑭
WN-5000R v2	802.11n Wireless Pocket AP/Router	⑪
WL-1500R	802.11g Wireless Router	⑰
WIAS-1200G	802.11g Internet Access	㉗
Ⓗ Wireless ADSL Router		
WT-2000ARM	Turbo-G ADSL2/2+ Router	⑮

Building a Wireless Network

WLAN Card Decision

Wireless AP Decision

For Notebook PC

For Desktop PC

For PDA

Need to Stay Inside Notebook?

Yes → Cardbus WLAN Card Ⓔ

No

For Office or Home?

Home / Office

WLAN SD I/O Card Ⓐ

Need Extra Long Distance?

Yes → WLAN USB with Detachable Antenna Ⓓ

No

PCI WLAN Adapter Ⓑ

Portable WLAN USB Adapter Ⓒ

Have a Router?

Yes → Wireless AP Ⓕ

No

Have ADSL or Cable Modem?

Yes → Wireless Router Ⓖ

No

Wireless ADSL Router Ⓗ

Wireless Technologies

IEEE 802.11 Standard Table

802.11a An IEEE specification for wireless networking that operates in the 5 GHz frequency range (5.15 GHz to 5.850 GHz) with a maximum of 54 Mbps data transfer rate. The 5 GHz frequency band is not as crowded as the 2.4 GHz band and it delivers higher MAC layer throughput. However, the 802.11a delivers shorter distance at the same output power when comparing to 802.11g/b.

802.11b International standard for wireless networking that operates in the 2.4 GHz frequency range (2.4 GHz to 2.4835 GHz) and provides a throughput up to 11 Mbps.

802.11c Documentation of 802.11 specific MAC procedures for the ISO/IEC 10038 (IEEE 802.1D) standard.

802.11d Publication of definitions and requirements to allow the 802.11 standard in countries that still doesn't allow it.

802.11f Practice for Multi-Vendor Access Point Interoperability via an Inter-Access Point Protocol Across Distribution Systems Supporting IEEE 802.11 Operation.

802.11g A standard that provides a throughput up to 54 Mbps us OFDM technology. It also operates in the 2.4 GHz frequency band as 802.11b. 802.11g devices are backward compatible with 802.11b devices.

802.11n 802.11n is designed to increase WLAN speeds to at least 100M bps for data and actual throughput rates. It also uses the MIMO smart antenna technology to increase wireless coverage. It will focus on throughput at MAC interface rather than the physical layer. The standard is expected to finalize by the end of 2006.

802.11i For security in a wireless local area network. The 802.11i standard is backward compatible with WPA. It is also known as WPA2.

802.16a Also known as WiMax. WiMax is new standard designed for wireless MAN structure. Throughput is currently rated approximately at 40 to 70Mbps. 802.16d is the base station architecture implementation. 802.16e is the mobile station architecture. Wimax is not expected to become the mainstream wireless broadband solution until the year 2007 to 2008.

802.11h Responsible for dynamic channel selection and transmission power control.

802.11e Also known as WMM. This standard provides Quality of Service for video and audio multimedia applications.

802.11j Channel selection for 4.9GHz and 5GHz in Japan.

802.11k Definition of Radio Resource Measurement enhancements.

Multiple-Mode Access Point

A multi-function AP has more than one operation modes for different wireless applications. The section will provide an overview of those different operation modes.

AP mode
The most basic mode of multi-function Access Point. In this mode, the AP will act as a central hub for different Wireless LAN clients. Some hotspot APs requires 802.1x authenticator function to authenticate a user before providing Internet service.

Client Mode
Also known as Ethernet Client. In this mode, the AP will act as a WLAN card to connect with the remote AP. Users can connect PC or local LAN to the Ethernet port of the client mode AP. This mode is mostly used as a CPE device for WISP subscriber.

Bridge mode
In this mode, 2 access points in two remote locations connect to each other to provide a wireless bridge between 2 remote LANs. It is mostly used by enterprise to connect 2 remote office's network together. The bridge modes are connected by using either the WDS (Wireless Distribution System) or Adhoc topology

WDS Repeater
A repeater's function is to extend the wireless coverage of another wireless AP or router. For WDS repeater to work, the remote wireless AP/Router must also support WDS function.

Universal Repeater
An universal repeater can also extend the wireless coverage of another wireless AP or router. But the universal repeater does not require the remote device to have WDS function. Therefore, it can work with almost any wireless device.

WISP (Client Router) mode
In WISP mode, the AP will behave just the same as the Client mode for wireless function. However, router functions are added between the wireless WAN side and the Ethernet LAN side. Therefore, the WISP subscriber can share the WISP connection without the need for extra router.

WISP + Universal Repeater mode
In this mode, the AP behaves virtually the same as the WISP mode, except one thing: the AP can also send wireless signal to the LAN side. That means the AP can connect with the remote WISP AP and the indoor wireless card, and then provide IP sharing capability all at the same time! However, the output power is divided between 2 wireless side and proper antenna installation can influence the performance greatly.

Gateway mode
In gateway mode. The AP will behave like a broadband router. One of the LAN port will behave as a WAN port for wired connection to ADSL or Cable modem. The NAT routing will be performed between the WAN and LAN port. Making IP sharing possible.

The AirLive WL-5460AP/WL-5470AP are the only multi-function APs in the industry to support all 8 modes out of box!

MIMO-G

The AirLive MIMO-G family is designed to provide faster speed and wider coverage than standard 802.11 products using the following technologies:

MIMO

A smart antenna technology that uses 2 or more antennas to achieve wider wireless coverage and less wireless dead spots. MIMO contains 3 key component technologies to achieve the result

- **Spatial Antenna Diversity:** to increase RX power at the receiver end
- **Spatial Division Multiplexing:** to increase the number of data stream
- **Advanced Beam Focusing:** Focus available power toward intended Rx

Turbo G

A technology that uses packet-overdrive technique to achieve much faster performance than standard 802.11g device.

XR

A technology that uses range-overdrive technique to increase the range and reduce wireless dead spots for better overall wireless coverage.

The combination of these technologies results in up to 3 times the performance of standard 11g speed. AirLive's MIMO-G XR technology delivers the most complete product line and the best price-performance among all the competitions.

No-MIMO system test result

MIMO system test result
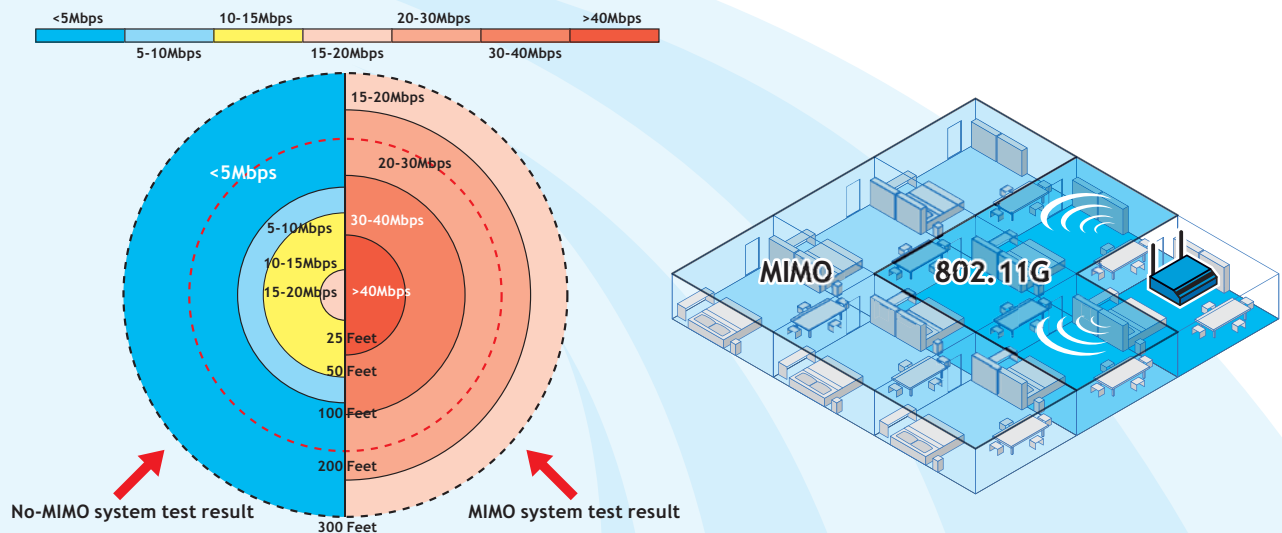
Turbo Modes

Turbo Modes are special wireless modes that improve the performance of a standard wireless connection. On average, they are about 30% to 80% faster than 802.11g standard. Since turbo modes are proprietary standards by different chipset companies, turbo modes are operational only within the same chipset solution. However, all turbo mode equipments are 100% compatible with standard 802.11g /b devices. They can communicate to each other in 802.11g mode perfectly.

Super G
A turbo mode standard by chipset vendor Atheros Communications that use channel-binding technology.

Turbo G
A turbo mode standard by chipset vendor Ralink Technology. Turbo G product can run in Turbo G mode when using with MIMO XR solution

802.11n
The AirLive 802.11n offers up to 300Mbps speed. It is compatible in Turbo mode with Turbo-G and MIMO-G devices.

Turbo Mode Compatibility Chart

	MIMO	Turbo G	Super G	802.11G+	802.11n
MIMO	MIMO	Turbo G	802.11g	802.11g	MIMO
Turbo G	Turbo G	Turbo G	802.11g	802.11g	Turbo G
Super G	802.11g	802.11g	SuperG	802.11g	802.11g
802.11G+	802.11g	802.11g	802.11g	802.11G+	802.11g
802.11n	MIMO	Turbo G	802.11g	802.11g	802.11n

*The intersection value indicates the resulting operation mode.

Super G Devices	
WLA-5000AP v3	⑫
Turbo-G Devices	
WT-2000AP	⑮
WT-2000R	⑮
WT-2000PCI	⑮
WT-2000USB	⑮
WT-2000ARM	⑮
802.11n Devices	
WN-5000R v2	⑪
WN-5000USB v2	⑪
WN-5000PCI v2	⑪
802.11g Devices	
WL-1500R	⑰

Wireless LAN Speed Comparison

Wireless LAN speed are measured in 2 different standards

Physical Layer Speed

Physical layer speed is how fast the hardware chipset switch data. It is not the measurement of real file transfer speed. However, most WLAN standards are rated by their physical Layer speed. For example, when we quote 802.11g standard as "54Mbps", we are referring to the physical layer speed.

MAC Layer Speed

MAC layer speed is how fast the wireless device transfer real data. It is the real measurement of performance.

Wireless LAN Speed Comparison*							
Standard	802.11a	802.11b	802.11g	Turbo-G	MIMO-G	Super-A	802.11n
Physical Layer Speed	54Mbps	11Mbps	54Mbps	125Mbps	125Mbps	108Mbps	300Mbps
MAC Layer Speed	23Mbps	4Mbps	20Mbps	30Mbps	30Mbps+	33Mbps	120Mbps
MIMO Technology					●		●
Frequency Band	5 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	5 GHz	2.4GHz or 5 GHz (depends on specification)

* The performance are approximate values. Actual values depend on distance, obstacles, and interference.

The 802.11n offer substantial performance boost over other standards in real world performance than other wireless standards. It is perfect for multimedia and office applications. However, the 802.11n performance depends on MIMO functions; the performance boost is not useful for outdoor long distance applications.

WPS (Wi-Fi Protected Setup)

WPS is a standard created by Wi-Fi alliance to simply the process of building a secured home wireless network. In another word, it makes the process of making wireless encryption much easier. WPS only works with WPA or WPA2 encryption scheme. WPS can be typically achieved using the following method :

Push Button(PBC)

A WPS PBC enabled device will feature a push button where users simply push a button on both the AP/Router and wireless cards to setup the secured connection. Push Button is only required at the AP/Router side.

PIN number

The wireless card comes with a PIN number on its label. Users only have to enter the PIN number at the AP/Router's configuration.
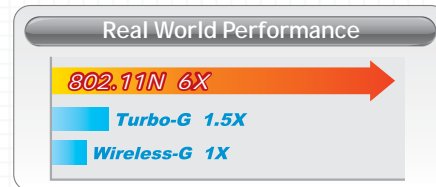
USB

The user use a USB stick to trasnfer the setup configuration between the AP and the wireless client.

AirLive 802.11n router and USB Adapter include the WPS Push Button to simplify the process of building a secure wireless network.

Wireless LAN
802.11n Products

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

802.11n

The 802.11n offers up to 6X faster speed in real world application than standard Wireless-G device!

300Mbps

Real World Performance

802.11N 6X	
Turbo-G 1.5X	
Wireless-G 1X	

WN-5000R v2

`Vista` `WPS` `802.11N` `MIMO` `WDS` `300 Mbps` `WPA2`

802.11n Wireless Router

The WN-5000R v2 is an advance wireless router that uses the latest 802.11n technology. This mean your file transfer speed can be up to 120Mbps in real throughput! Over 6 times faster than standard 802.11g device! It uses the MIMO-G technology to provide ultra high speed and wireless coverage. The AP has 4 LAN ports to let you put more than one wired device for sharing.

- 4 x 10/100Mbps LAN ports
- 802.11n Speed, Up to 6 times faster than wireless-G!
- PPTP, L2TP, PPPoE, DHCP, Fixed, Bigpond ISP supports
- WPS push button support
- WDS repeater function, WEP, WPA, WPA2
- 802.11e, 802.11d, 802.11h, and WMM support

WN-5000USB v2

`Vista` `WPS` `802.11N` `MIMO` `USB` `300 Mbps` `WPA2`

802.11n Wireless USB Adapter

The WN-5000USB v2 is an advanced 802.11n USB Adapter that use the 802.11n technology to provide ultra high speed and wireless coverage. Over 6 times faster than standard 802.11g device! The WN-5000USB v2 is the first 802.11n Pen-Size USB adapter that is small enough to carry with you everywhere!

- USB 2.0 Interface
- 802.11n Speed, Up to 6 times faster than wireless-G!
- Compact Pen Size
- WEP, WPA, WPA2 Encryptions
- WPS push button support
- 802.11e, 802.11d, 802.11h, and WMM support

WN-5000PCI v2

`Vista` `WPS` `802.11N` `MIMO` `PCI` `300 Mbps` `WPA2`

802.11n Wireless PCI Adapter

The WN-5000PCI v2 is an advanced 802.11n PCI Adapter that use the 802.11n technology to provide ultra high speed and wireless coverage. Over 6 times faster than standard 802.11g device! It features 3 detachable antennas for optimal reception and coverage.

- PCI Interface
- 802.11n Speed, Up to 6 times faster than wireless-G!
- Compact Pen Size
- WEP, WPA, WPA2 Encryptions
- WPS push button support
- 802.11e, 802.11d, 802.11h, and WMM support

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

Air Live®
Powered by OvisLink Corp.

802.11a/b/g Products

A 802.11a/b/g product is a dual band wireless device that can run either in 802.11a mode or 802.11g/b mode. The 802.11g and 802.11b modes run in the 2.4GHz spectrum while the 802.11a mode works in 5GHz spectrum.

802.11a   802.11a is an IEEE specification for wireless networking that operates in the 5 GHz frequency range (5.15 GHz to 5.850 GHz) with a maximum of 54 Mbps data transfer rate. The 5 GHz frequency band is not as crowded as the 2.4 GHz band. In addition, the 802.11a have 12 non-overlapping channels, comparing to 802.11b/g 3 non-overlapping channels. This means the possibility to build larger non-interfering networks. However, the 802.11a deliver shorter distance at the same output power when comparing to 802.11g. Therefore, a higher gain antenna is required to deliver the same distance as comparable 2.4GHz device.

Domain	Frequency Range	Channel No.
ETSI 1/ U-NII	5.15 - 5.35 GHz	36, 40, 44, 48, 52, 56, 60, 64
ETSI 2	5.47 - 5.725 GHz	100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140
FCC/ U-NII	5.725 - 5.825 GHz	149 153 157 161 165

The 802.11a spectrum is divided into 3 bands. Each country's indoor and outdoor frequency bands are different. Please check with your local telecom authority for available band. If you purchase AirLive products, the frequency is likely already adjusted for your country.

WLA-5200AP

WDS | Client Mode | AP+ Router | Bridge | WISP | Universal | 802.11 a/b/g | QoS | WPA2 | ACK

802.11a/b/g Multi-function AP

The WL-5200AP is the first 802.11a/b/g wireless AP featuring 8 wireless modes. It is cost effective and ideal to work as client AP for WISP's 5GHz service. With 8 advanced wireless modes, it satisfies the need for office and Hotspot applications also. The Bandwidth Control, ACK timeout and RSSI feature makes it suitable for long distance application.

- 802.11a/b/g Dual Band
- 2-LAN ports, 4MB Flash, 32MB SDRAM
- AP , AP+Router Bridge, Client, Repeater, WDS mode
- Client Router, Universal Repeater, WISP + Universal mode
- 802.1X WPA, Watchdog, and Tx Power Regulation
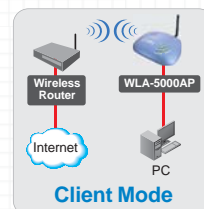
WLA-5000AP v3

Super-G | 5GHz | Client Mode | WISP Mode | WDS | ACK | Atheros | QoS | Multiple SSID | VLAN

108mbps 802.11a/b/g Multi-function AP

The WLA-5000AP v3 is a 108mbps 802.11a/b/g multi-function AP that is designed to operate in the 5GHz or 2.4Ghz spectrum. It features an incredible 6 wireless mode firmware.   The special designed long distance firmware provides Distance-to-ACK calculator, RSSI for antenna alignment, and adjustable output power. Best of all, it incorporates Bandwidth Control and WDS Site survey to make advanced control for WISP operators possible.   The multiple SSID and VLAN features make multi-service zone and multi-service provide application a reality.   In addition, function such as 802.1x, SNMP, and WPA are standard in the firmware.

- 802.11a/b/g compatible, 2.4Ghz and 5Ghz spectrum
- Detachable Antenna with R-SMA connector
- AP, WDS, Bridge , Client, WISP mode selectable
- Atheros 108Mbps Turbo Mode
- CE certified with TPC and DFS
- Bandwidth Control, WDS Site Survey, RSSI
- Multiple SSID, VLAN, TOS, WMM
- Watchdog, SNMP support, and ACK Calculator

WLA-5000AP | PC | NoteBook
AP Mode

WLA-5000AP | WLA-5000AP | PC | PC
WDS Bridge

Wireless Router | WLA-5000AP | Internet | NoteBook
WDS Repeater

Wireless Router | WLA-5000AP | Internet | PC
Client Mode
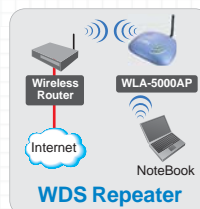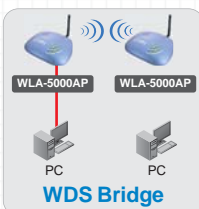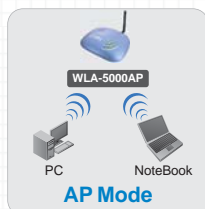
5GHz Outdoor Antenna

WAE-509GP	WAE-5014PA	WAE-5018PA	WAE-5023PA	WAE-5024GR
9dBi 5Ghz GP Antenna	14dBi 5Ghz Patch Antenna	18dBi 5Ghz Patch Antenna	23dBi 5Ghz Patch Antenna	24dBi 5Ghz Outdoor Antenna

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Dual Band Dual Radio Access Point

The WLA-9000AP is a dream device for WISP to build their wireless networks. The AP features 2 Atheros 11a/b/g radios that run in 5Ghz or 2.4GHz frequency band. Moreover, it provides hi-power at 11a mode for extra long distance application. There is an integrated 802.3af PoE port to let you run the AP at up to 100 meter distance away from the power source.

Wireless Duplex Bridge

The wireless duplex function doubles the link speed of a bridge connection by aggregating the dual radio link between 2 APs. Using the Super A mode, it achieve up to 45Mbps in real throughput in optimal condition.
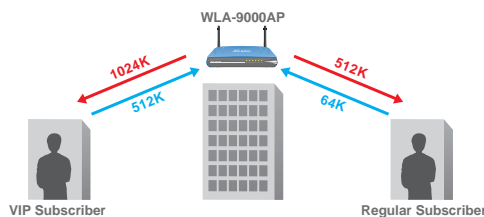
TX
Double Link Speed!
RX
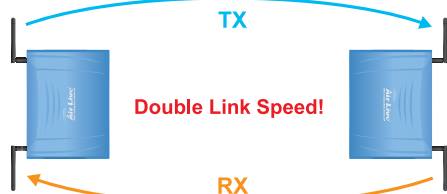
High Power Dual Radio

The WLA-9000AP has 2 radios built-in. One can operate in 5GHz mode, the other can operate in either 5GHz or 2.4GHz. This brings versatility to suit all kind of WISP environment. Better yet, each radio has maximum 23dbm output even in 5GHz mode for much longer distance than other APs.

23dbm   23dbm
802.11a/b/g   802.11a
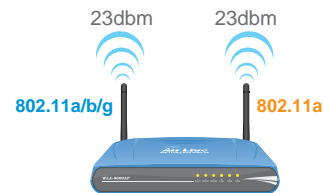
Bandwidth Control

The WLA-9000AP can control the bandwidth of the WISP subscribers. Therefore, the WISP operators can offer different class of connection speeds for different subscription fees - just like the ADSL service.

WLA-9000AP
1024K   512K
512K   64K
VIP Subscriber   Regular Subscriber

Antenna Alignment Tool

Wireless Signal Survey function tells you the receiving signal strength dynamically as your antenna turns. It automatically refreshes itself in the process, therefore, making antenna alignment much simpler than before.

Outdoor AP
Signal 70
Signal 20
WLA-9000AP
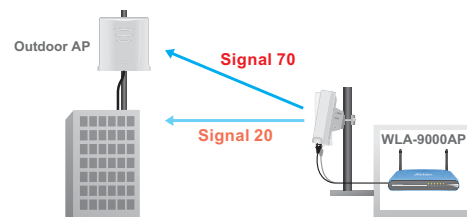
POE Port

The WLA-9000AP has an integrated 802.3af PoE port to let you power the AP at up to 100 meter distance away from the power source.
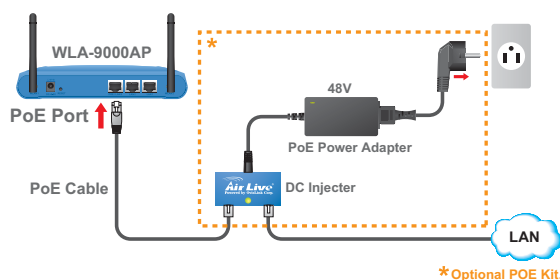
WLA-9000AP
PoE Port
PoE Cable
48V
PoE Power Adapter
DC Injecter
LAN
*Optional POE Kit.

Multiple Operation Mode

The WLA-9000AP features a total of 14 operations mode. Whether it is for building the wireless backbone, Access Point network, or wireless client; the WLA-9000AP is capable of adapting your network needs.

Mode	Radio 1 (11a)	Radio 2 (11a/b/g)
Dual AP	Access Point	Access Point
Duplex	WDS Bridge	WDS Bridge
Dual WDS Bridge	WDS Bridge	WDS Bridge
Separate Bridge	WDS Bridge	WDS Bridge
AP + Client	Access Point	Wireless Client
Client + AP	Wireless Client	Access Point
AP + WDS Bridge	Access Point	WDS Bridge
WDS Bridge + AP	WDS Bridge	Access Point
WDS + Gateway	WDS Bridge	Gateway (AP Router)
Gateway + WDS	Gateway (AP Router)	WDS Bridge
AP + Gateway	Access Point	Gateway (AP Router)
Gateway + AP	Gateway (AP Router)	Access Point
AP + WISP	AP Router	WISP Bridge
WISP + AP	WISP mode	AP Router

WLA-9000AP

Dual Radio | 5GHz | 2.4GHz | Atheros | 108 Mbps | POE | Duplex | SNMP

Dual Band Dual Radio Access Point

- 1 x 108Mbps 11a Radio + 1 x 108Mbps 11a/b/g Radio
- 3 LAN/WAN Ports
- 802.3af PoE port
- Support Atheros Super A and Super G mode
- Up to 23dBm Output power in 11a mode
- Bandwidth Control, Multiple SSID, VLAN
- Operate in 2.4GHz and 5GHz
- 14 Wireless Operation Modes including AP, bridge, client, router, gateway and repeater
- Wireless Duplex Mode
- SNMP, Web, Telnet Functions

WLA-9000AP

WLA-9000AP-PCBA

Ordering Information:

WLA-9000AP	Dual Radio Dual Band AP
WLA-9000AP-PCBA	Dual Radio Dual Band AP PCBA only
POE-1000PB	POE Kit for WLA-9000AP

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WMM-3000AP

`Vista` `MIMO` `WDS` `802.1x` `WPA2` `Hide SSID` `SNMP`

MIMO-G Access Point

The WMM-3000AP is an advance wireless AP using the MIMO-G technology to provide ultra high speed and wireless coverage. The AP has 4 LAN ports to let you put more than one wired device for sharing. Advanced hotspot AP functions such as 802.1x radius and WPA2 are included in the AP's rich feature set. In addition, WDS repeater allows users to extend the wireless range with another AP.

- 4 x 10/100Mbps LAN ports
- Dual Antenna and Radio, 802.11g/b compatible
- MIMO + XR Technology for extend range
- Client isolation, Hide SSID, 802.1x radius
- WDS repeater function, WEP, WPA, WPA2
- 802.11e, 802.11d, 802.11h, and WMM support

WMM-3000R

`Vista` `MIMO` `Routing` `WDS` `802.1x` `WPA2` `Hide SSID` `SNMP` `Isolation`

MIMO-G Wireless Broadband Router

The WMM-3000R is an advance wireless router using the MIMO-G technology to provide ultra high speed and wireless coverage. Featuring phenomenon 95Mbps routing speed, it also supports all ISP authentications around the world.   Advanced wireless functions such as 802.1x radius, client isolation, and WPA2 are included. In addition, WDS repeater allows users to extend the wireless range with another AP.

- 4 x 10/100Mbps LAN ports
- Dual Antenna and Radio, 802.11g/b compatible
- PPTP, L2TP, PPPoE, DHCP, Fixed, Bigpond ISP supports
- Client isolation, Hide SSID, 802.1x radius, SNMP
- WDS repeater function, WEP, WPA, WPA2
- 802.11e, 802.11d, 802.11h, and WMM support

WMM-3000PCI

`Vista` `MIMO` `WPA2`

MIMO-G Wireless PCI Adapter

The WMM-3000PCI is an advanced family of wireless cards that use the MIMO-G technology to provide ultra high speed and wireless coverage. They are backward compatible with 802.11g/b standard. The WMM-3000PCI is a PCI card for desktop PC. They feature advanced WEP, WPA, WPA2 encryptions support for wireless security.

- PCI interface for Desktop PC
- Dual Antenna, 802.11g/b compatible
- MIMO + XR Technology for extend range
- WEP, WPA, WPA2 Encryptions
- 802.11e, 802.11d, 802.11h, and WMM support

WMM-3000PCM

`Vista` `MIMO` `WPA2`

MIMO-G Wireless PCM Adapter

The WMM-3000PCM is an advanced family of wireless cards that use the MIMO-G technology to provide ultra high speed and wireless coverage. They are backward compatible with 802.11g/b standard. The WMM-3000PCM is a Cardbus adapter for notebook PC. They feature advanced WEP, WPA, WPA2 encryptions support for wireless security.

- Cardbus interface for Notebook PC
- Dual Antenna, 802.11g/b compatible
- MIMO + XR Technology for extend range
- WEP, WPA, WPA2 Encryptions
- 802.11e, 802.11d, 802.11h, and WMM support

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WT-2000ARM

`Vista` `Turbo-G` `ADSL2/2+M` `Annex A/B/M` `WPA2`

Turbo-G ADSL 2/2+/2+M Router

The WT-2000ARM is a Turbo-G wireless router that has a built-in ADSL2/2+/2+M modem. The fast Turbo-G wireless speed matches with the 24Mbps ADSL2+M speed perfectly. It comes with an auto-install wizard that will make ADSL installation very easy. Just select your country and ISP, then enter your account information. That's all!

- 4 x 10/100Mbps LAN ports
- 1 x ADSL RJ-11 Port
- Turbo-G Wireless
- ADSL, ADSL2, ADSL2+, ADSL2+M Supports
- WDS bridge, repeater functions, WEP, WPA,WPA2
- Auto Setup Wizard

WT-2000AP

`Vista` `Turbo-G` `WDS` `802.1x` `WPA2` `Hide SSID` `SNMP`

Turbo-G Access Point

The WT-2000AP is an advance wireless AP using Turbo-G technology to provide ultra high speed. The AP has 4 LAN ports to let you put more than one wired device for sharing. Advanced hotspot AP functions such as 802.1x radius and WPA2 are included in the AP's rich feature set. In addition, WDS repeater allows users to extend the wireless range with another AP.

- 4 x 10/100Mbps LAN ports
- Compatible with 802.11g/b devices
- Turbo-G technology for up to 2X speed of 802.11g
- Client isolation, Hide SSID, 802.1x radius
- WDS repeater function, WEP, WPA, WPA2
- 802.11e and WMM support

WT-2000R

`Vista` `Turbo-G` `Routing` `WDS` `802.1x` `WPA2` `Hide SSID` `SNMP` `Isolation`

Turbo-G Wireless Broadband Router

The WT-2000R is an advance wireless router using the Turbo-G technology to provide ultra high speed and wireless coverage. Featuring phenomenon 95Mbps routing speed, it also supports all ISP authentications around the world. Advanced wireless functions such as 802.1x radius, client isolation, and WPA2 are included. In addition, WDS repeater allows users to extend the wireless range with another AP.

- 1 WAN + 4 x 10/100Mbps LAN ports
- Turbo-G technology, 802.11g/b compatible
- PPTP, L2TP, PPPoE, DHCP, Fixed, Bigpond ISP supports
- Client isolation, Hide SSID, 802.1x radius, SNMP
- WDS repeater function, WEP, WPA, WPA2
- 802.11e and WMM support

WT-2000PCI

`Vista` `Turbo-G` `WPA2`

Turbo-G Wireless PCI Adapter

The WT-2000PCI is an advanced family of wireless cards that use the Turbo-G technology to provide ultra high speed and wireless coverage. They are backward compatible with 802.11g/b standard. The WT-2000PCI is a PCI card for desktop PC. They feature advanced WEP, WPA, WPA2 encryption support for wireless security.

- PCI interface for Desktop PC
- Compatible with 802.11g/b devices
- Turbo-G technology for up to 2X speed of 802.11g
- WEP, WPA, WPA2 Encryptions
- 802.11e and WMM support

WT-2000USB

`Vista` `Turbo-G` `WPA2`

Turbo-G Wireless USB Adapter

The WT-2000USB is a wireless USB adapter that uses the Turbo-G technology to provide ultra high speed connections. It is also backward compatible with 802.11g/b standard. It features advanced WEP, WPA, WPA2 encryptions support for wireless security.

- USB 2.0 interface
- Compatible with 802.11g/b devices
- TURBO G technology for up to 2X speed of 802.11g
- WEP, WPA, WPA2 Encryptions
- 802.11e and WMM support

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802.11G Multi-function AP

WL-5450AP

`WDS` `Client Mode` `Bridge` `802.1x` `WPA2` `Hide SSID`

802.11G Multi-function AP

The WL-5450AP is the successor to our famous WL-1120AP. It features 5 multi-function modes, TX power regulation, 802.1x and WPA2 security. With 2 LAN ports and acclaimed reliability, it is one of the most popular AP in the industry.

- 802.11g Wireless, 20dBm output power
- 2 x 10/100Mbps ports, 1MB Flash, 8MB SDRAM
- AP , Bridge, Client, Repeater, WDS multi-function
- 802.1X WPA, Watchdog, and Tx Power Regulation

WL-5460AP v2

`WDS` `Client Mode` `Bridge` `WISP` `Universal` `802.1x` `WPA2` `ACK` `QoS`

802.11G Multi-function AP

The WL-5460AP v2 is world's most popular multi-function access point. It features an impressive total of 8 wireless multi-function modes that are not available in normal access point. In addition, it can achieve up to 26dBm of output power in South America firmware. The Traffic Control, WISP Connection Wizard, ACK timeout and RSSI feature makes it suitable for long distance application. From ordinary AP application to Hotspot and WISP usage, you will find the WL-5460AP v2 is the device you need.

- 20dBm(11g) and 26dBm(11b) TX power
- 2 x 10/100Mbps ports, 2MB Flash, 16MB SDRAM
- AP, Router, Bridge, Client, Repeater, WDS mode
- Traffic Bandwidth Control, WDS Site Survey, RSSI
- Client Router, Universal Repeater, WISP + Universal mode
- WDS Site Survey, Telnet, Web, and Tx Power Regulation

WL-5470AP

`WDS` `Client Mode` `Bridge` `WISP` `Universal` `Gateway Mode` `802.1x` `WPA2` `ACK` `QoS`

802.11G Multi-function 5-port AP + Router

The WL-5470AP is the most versatile 802.11g multi-function AP that features incredible 8 wireless modes. The built-in hardware power amplifier increases the output power to 26dBm for South American region (20dBm for EU). The Traffic/bandwidth Control, WISP Connection Wizard, ACK timeout and RSSI features make it ideal for WISP and HotSpot providers' applications.

- 23dBm(11g) and 26dBm(11b) TX power
- 5 x 10/100Mbps ports,2MB Flash, 16MB SDRAM
- Client Router, Universal Repeater, WISP + Universal, Gateway mode
- AP, Router, Bridge, Client, Repeater, WDS mode
- Traffic Bandwidth Control, WDS Site Survey, RSSI
- WDS Site Survey, Telnet, Web, and Tx Power Regulation

WL-5470POE `PR`

`WDS` `Client Mode` `Bridge` `WISP` `Universal` `POE` `QoS` `WPA2` `ACK` `SSH2`

802.11G Multi-function AP + POE

The WL-5470POE is a multi-function access point with POE splitter built-in. The 802.3af compliant POE port allows the AP to operate at up to 100 meter from power source. Moreover, its double size 4MB flash memory leave AP space for expansion of additional features. The SSH2, Traffic Control, WISP Connection Wizard, ACK timeout and RSSI features make it suitable for long distance application. From ordinary AP application to Hotspot and WISP usage, you will find the WL-5470POE is the device you need.

- 20dBm(11g) and 26dBm(11b) TX power
- 2 x 10/100Mbps ports,4MB Flash, 16MB SDRAM
- AP , AP + Router, Bridge, Client, Repeater, WDS mode
- Client Router, Universal Repeater, WISP + Universal mode
- SSH2, Traffic Bandwidth Control, WDS Site Survey, RSSI
- 802.1X WPA, Watchdog, and Tx Power Regulation

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802.11G Router

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WL-1500R

`Vista` `Routing` `Security Filter` `802.11g` `WPA` `XR` `WPA2`

802.11G Wireless Broadband Router

The WI-1500R is a high performance and simple to use 802.11g Wireless router that features Athero's eXtended Range support. That means longer distance can be achieved when operating with other XR compliance equipment. The router supports virtually all major ISP in the world. In addition, comprehensive filtering function allows parent to stop children from surfing unwanted website.

- 4 x 10/100Mbps LAN ports
- 802.11g/b Wireless
- Athero's XR support
- PPTP,L2TP,PPPoE,DHCP,Fixed, Bigpond ISP supports
- WEP,WPA,WPA2 supports
- TTL, Hide SSID supports

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802.11g/b Wireless Adapters

WL-5480USB

| Vista | 54 Mbps | WPA2 | USB | Linux | PSP | MAC OS |

Wireless-G USB Adapter with removable Antenna

The WL-5480USB is a high performance 802.11g USB adapter with detachable antenna. It comes equipped with either a 5dBi or 8dBi high gain antenna for longest possible distance. In addition, an AP mode software is included that will turn your computer into an AP. Moreover; Windows, Linux, MAC OSX, and Sony PSP driver are supported.

- **WL-5480USB-50:** Wireless-G USB + 5dBi Dipole antenna
- **WL-5480USB-80:** Wireless-G USB + 8dBi Patch antenna
- R-SMA Connector for antenna
- Software AP, WPA, and 802.11i

WL-5480USB-80   WL-5480USB-50

WL-1100SD

| SD I/O | PocketPC |

802.11G Multi-function AP

The AirLive WL-1100SD is a SDIO WLAN adapter for PDA and Smartphone. It is compatible with the 802.11b Wi-Fi standard to let your mobile device accessing Internet and network everywhere. Instantly, it brings your PDA and Smartphone to the world of Internet.

- 802.11b WLAN SDIO Card
- For PDA and Mobile Phone
- PocketPC 2002/2003 Support
- 802.11b WLAN SDIO Card
- For PDA and Mobile Phone
- PocketPC 2002/2003 Support

Internet

PDA / SMART Phone

WL-1100SD

Wireless Router

WL-1100SD

PDA / SMART Phone

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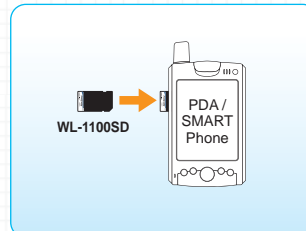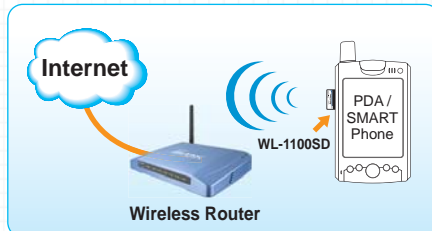
Increasing the Indoor WLAN distance

If you have a complex environment with many walls and obstacles, you might find the wireless coverage doesn't meet up to the requirement. Currently, there are 5 different approaches to solve the problem:

Using the MIMO Wireless Solution

MIMO uses multiple antennas and radio to increase the coverage and reducing the dead spot. The only disadvantage is that it will not help the existing no-MIMO equipments; all wireless devices must be MIMO capable.

Using a larger antenna

High gain antennas are the easiest way to increase wireless distance, albeit at the expense of the coverage angles. High gain antennas do not actually increase the signal strength; instead, they concentrate the available RF power at certain directions. This solution is the best used if your environment is on the same floor.

Using wireless repeater function

Repeater function allows an AP to repeat the signal from another AP, thus increase the coverage. It is the most effective solution. However, the setup involves some software settings and basic knowledge of WLAN architecture.

Using a Power Booster

Power boosters increase the signal strength by electrically amplifying the RF power to larger value. Thus increase the distance without compromising the coverage angle. The installation doesn't involve any software; just connect one end to antenna and the other end to the AP. However, your AP should support TX power regulation to reduce the output strength before booster amplifies the signal. Otherwise, the result might be worse than before. Please also try to avoid using very high-powered booster unless the distance is far away.

Using Homeplug as wireless Bridge

If you have a thick wall or other obstacle in the house that the WLAN signal just couldn't penetrate. You should consider using Homeplug as the bridges between the wireless APs.

AirLive Indoor Boosters

The AirLive indoor power booster family provides the most comprehensive selections of indoor boosters. The installation doesn't involve any software; just connect one end to antenna and the other end to the AP. You wireless signal is instantly amplified.

- **WPA-2400IG-20:** 802.11g / 20dBm(100mW) output.
- **WPA-2400IG-23:** 802.11g / 23dBm (200mW) output.
- **WPA-2400IG-27:** 802.11g / 27dBm (500mW) output.

- **WPA-2400IB-20:** 802.11b / 20dBm(100mW) output.
- **WPA-2400IB-23:** 802.11b / 23dBm (200mW) output.
- **WPA-2400IB-27:** 802.11b / 27dBm (500mW) output.

AirLive Indoor Antennas

High Gain antennas are the quickest way to increase WLAN coverage. If your AP has an antenna connector, simply replace the factory antenna with a high gain antenna. There are 2 types of high gain antenna available:

Dipole Antenna

Dipole antenna has a 360-degree horizontal coverage and wider vertical coverage than patch antennas. However, their gain is typically less than patch antennas. Dipole antennas higher than 8 dBi should be avoided for indoor application because of their very narrow vertical coverage.

Patch Antenna

Also known as panel antenna. Patch antennas are directional antenna that focus the RF power at particular direction. Therefore, they usually have higher gain than Dipole antenna.

WAI-050

- 2.4Ghz 5dBi Dipole Antenna
- Connect Directly to AP
- Swivel Head

WAI-080

- 2.4Ghz 8dBi Rubber Antenna
- 360 degree Horizontal, 40 degree Vertical
- Connect Directly to AP
- Swivel Head

WAI-100PA

- 2.4Ghz 10dBi Patch Antenna
- Female SMA connector
- Indoor Point-to-Point use

WAI-102PA

- 2.4Ghz 10dBi Indoor Patch Antenna
- Ultra compact design
- Swivel and Tilt
- Desktop or Wall Mount

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Experience and Know-how

The Wireless LAN technology not only brought freedom of communication for indoor networking, it also liberates long distance communication from expensive wired leased lines. Dedicated long distance link is no longer prohibitively expensive. Furthermore, broadband Internet connection can now be delivered through wireless links. The technology can bring the world of Internet to areas where wired infrastructures are not fully deployed. However, it takes professional experiences and know-how to successfully install outdoor connections. Weather conditions, humidity, cable selection, antenna alignment, software function, and installation site can influence the stability of your outdoor WiFi connections greatly. This is why you will need an experienced partner to provide you with the right equipment and know-how. The AirLive outdoor solutions includes all the equipment and accessories to help you build a wireless network. Please read through the following section for your guide to make a successful outdoor WLAN network.

Outdoor AP/Bridge

Model No.	Page Number	Pre-Annouced Product	Wireless Standard	5GHz Frequency	2.4GHz Frequency	Chipset Vendor	Output Power(dBm)	Radio Module	Built-in Antenna	POE	802.3AF	Antenna Connectors	Lightning Protector	Pole Mount Kit	Wall Mounting Kit	POE Cable	AP Mode	Client Mode	WDS Mode	Bridge Mode	Gateway Mode	WISP Mode	MESH	WEP	WPA	WPA2	ACK Value Adjustable	WMS	TX Power Adjustament	Bandwidth Management	WDS Site Survey	RSSI Signal Survey
MESH Outdoor AP/Bridge																																
WH-9000MESH	26		11a/b/g	●	●	A	20	2		●	●	2	▲	●	●	●	●		●	●			●	●	●	●	●	●	●	●		●
WH-9100MESH	26		11a/b/g	●	●	A	20	2		●	●	2	▲	●	●	●	●		●	●	●			●	●	●	●	●	●	●		●
5Ghz Outdoor AP/Bridge																																
WH-5854A	26		11a	●		A	20	1		●	●	1	○	●	●	●			●					●	●		●	●	●			
WH-5000A	26		11a/b/g	●	●	A	20	1		●		1	▲	●	●	●	●	●	●	●				●	●		●			●		
2.4GHz 54Mbps Outdoor AP/Bridge																																
WH-5410G-20	28		11g/b		●	A	20	1		●		1		●	●	●	●	●	●	●	●			●	●		●		●			●
WH-5410G-20-PA	28		11g/b		●	A	20	1	●	●		1		●	●	●	●	●	●	●	●			●	●		●		●			●
WH-5410G-27	28		11g/b		●	A	27	1		●		1		●	●	●	●	●	●	●	●						●		●			●
WH-5410G-27-PA	28		11g/b		●	A	27	1	●	●		1		●	●	●	●	●	●	●	●						●		●			●
WH-5410G-30	28		11g/b		●	A	30	1		●				●	●	●	●	●	●	●	●			●	●		●		●			●
WH-5410G-30-PA	28		11g/b		●	A	30	1	●	●				●	●	●	●	●	●	●	●			●	●		●		●			●
Outdoor CPE																																
WHA-5500CPE	25		11a		●	A	20	1	●	●	●	●		●	●	▲	●	●	●				●	●	●		●		●	●	●	●
WHA-5500CPE-NT	25	●	11a/b/g	●	●	A	20	1		●	●	●	●		●	●	▲	●	●				●	●	●		●		●	●	●	●
WH-5420CPE	27	●	11g/b		●	R	20	1	●	●		●	●	▲	▲	●	●	●	●	●	●		●	●	●		●		●	●	●	●
WH-5400CPE-ESD	27		11g/b		●	A	20	1	●	●		●	●	▲	▲	●	●	●	●	●	●		●	●	●		●		●	●	●	●
2.4GHz 11Mbps Outdoor Bridge																																
WHB-1100	28		11g/b		●	C	20	1		●		1	●	●	●					●				●			●			●		●
WHB-1120	28		11g/b		●	C	20	1	●	●		1	●	●	●					●				●			●			●		●
WHB-1130	28		11g/b		●	C	30	1		●		1	●	●	●					●				●			●			●		●
2.4GHz 11Mbps Outdoor AP																																
WHP-1100	28		11g/b		●	C	20	1		●		1	●	●	●	●	●							●			●			●		●
WHP-1120	28		11g/b		●	C	20	1	●	●		1	●	●	●	●	●							●			●			●		●
WHP-1130	28		11g/b		●	C	30	1		●		1	●	●	●	●	●							●			●			●		●

● Yes   ▲ Optional   ○ Onboard

Wireless Outdoor
Technologies

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WISP Software Features

WISPs are Internet Service Providers that provides Internet service through wireless connection. Wireless technology provides the quickest and most cost effective way to build up the Internet service infrastructure. However, wireless AP require specialized software features to make WISP service possible.

Mulitple Wireless Operation Modes

The AirLive AP can provide up to 14 different wireless modes. It can work as a Wireless Router, AP, Client, Repeater, Bridge, and much more. Whether it is for home, office, or WISP; AirLive has a solution for you.
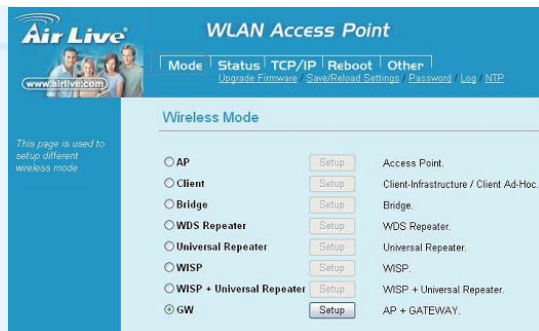

AP with Multi-Function Wireless Mode

Models	Wireless Modes	Page
WL-5450AP	4	16
WL-5460AP	8	16
WL-5470AP	8	16
WL-5470POE	8	16
WLA-5000AP v3	6	12
WLA-5200AP	8	12
WHA-5500CPE	6	25
WH-5400CPE-ESD	3	27
WH-5420CPE	8	27
WLA-9000AP	14	13

Traffic/Bandwidth Control

Traffic Control is a great tool to control the bandwidth of the WISP subscribers. Therefore, the WISP operators can offer different class of connection speeds for different subscription fees - just like the ADSL service! The AirLive advance Traffic Control firmware can control the bandwidth by Interface or IP/MAC.

Traffic Control QoS

Access Point with Traffic Control

1024K   512K

512K   64K

VIP Subscriber   Regular Subscriber
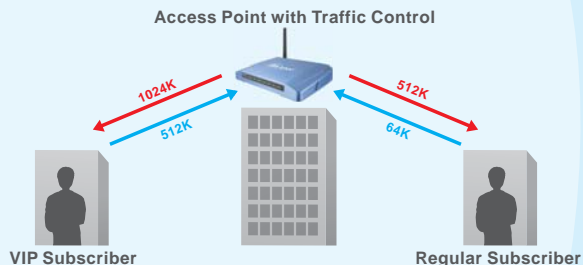
Device with Traffic / Bandwidth Control

Models	Page
WL-5460AP	16
WL-5470AP	16
WL-5470POE	16
WLA-5000AP v3	12
WLA-5200AP	12
WHA-5500CPE	25
WH-5420CPE	27
WLA-9000AP	13

Dynamic Signal Survey Function for Antenna Alignment

Having trouble align your antenna correctly to the other outdoor AP? The AirLive Wireless Signal Survey function tells you the receiving signal strength dynamically as your antenna turns. It automatically refreshes itself in the process, therefore, making antenna alignment much simpler than before.

Antenna Alignment Surrey

Outdoor AP

Signal 70

Signal 20   Access Point
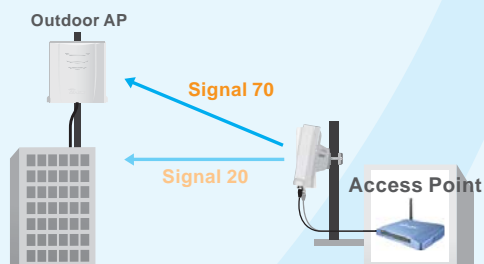
Device with Signal Survey

Models	Page
WL-5460AP	16
WL-5470AP	16
WL-5470POE	16
WLA-5000AP v3	12
WLA-5200AP	12
WHA-5500CPE	25
WH-5400CPE-ESD	27
WH-5420CPE	27
WH-5410G	28
WLA-9000AP	13

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

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Wireless Site Survey Connection Wizard

During a new WISP service installation, the installer will need to find out which outdoor AP provide the best signal in the area for connection. The AirLive wireless site survey function provides one step setup for this process. First, the site survey page shows which AP has the strongest the signal. Then the installer performs antenna alignment by using the signal survey function. At last, the installer simply clicks on "connect" button to establish connection. The site survey is available even in AP mode, so the installer can check the channels used by surrounding APs to avoid interferences.

Wireless Site Survey

SSID	BSSID	Channel	Type	Encrypt	Signal	Select
testd	00:0b	11 (B+G)	AP	WPA-PSK	100	○
Gateway	00:4f	11 (B+G)	AP	no	85	○
airlive	00:50	1 (B+G)	AP	no	83	◉
AirForce-2	0a:4	2 (B+G)	AP	no	82	○
AirLive	00:4	2 (B+G)	AP	no	82	○
Air-force-1	06:4f	2 (B+G)	AP	no	82	○
Freedom	00:05	6 (B)	AP	WEP	67	○
802.11g-SSID	00:e0	11 (B+G)	AP	no	63	○
CL-WLAN	00:13	1 (B+G)	AP	WPA	62	○

[Refresh] [Connect] [Signal Survey]

Device with Site Survey Wizard

Models	Page
WL-5460AP	16
WL-5470AP	16
WL-5470POE	16
WLA-5000AP v3	12
WLA-5200AP	12
WHA-5500CPE	25
WLA-9000AP	13

Wireless Client Isolation

AirLive firmware's Client Isolation function protects the security and privacy of each individual subscriber. Therefore, subscriber does not need to worry about hacker attacks in the same wireless network.

Client Isolation
Access Point
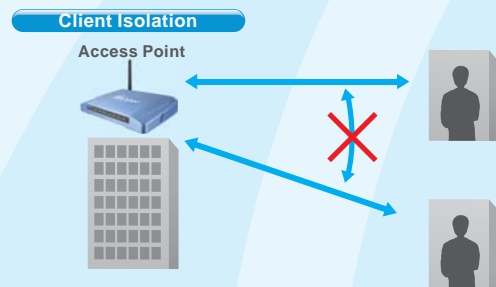
AP with Wireless Client Isolation

Models	Page
WL-5450AP	16
WL-5460AP	16
WL-5470AP	16
WL-5470POE	16
WLA-5000AP v3	12
WLA-5200AP	12
WHA-5500CPE	25
WH-5400CPE	27
WH-5420CPE	27
WLA-9000AP	13

Emergency Recovery

How many times has your machine crashed and lost access completely?

The AirLive's Emergency web server function means you can recover your AP even if the machine failed during a firmware upgrade. This greatly reduces the service loading for WISP operators.

Flash Memory
Firmware Area
Bootloader Area
Emergency Web Server
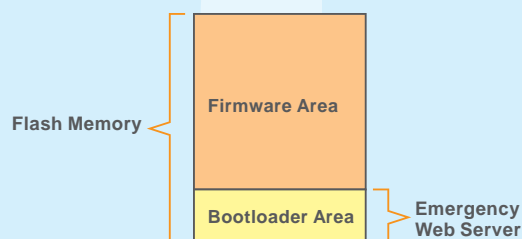
AP with Emergency Recovery

Models	Page
WL-5450AP	16
WL-5460AP	16
WL-5470AP	16
WL-5470POE	16
WLA-5000AP v3	12
WLA-5200AP	12
WHA-5500CPE	25
WH-5420CPE	27
WLA-9000AP	13

Wireless Outdoor
Technologies

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

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Building an Outdoor WLAN Network

This section will give you an overview on the basic concepts of building outdoor wireless networks. It provides the general guidelines on equipments, accessories and software features. However, since the variations on each installation site can influence the final result greatly; it is highly recommended to have experienced installers performing the actual design and installation.

Step 1: Knowing your need.

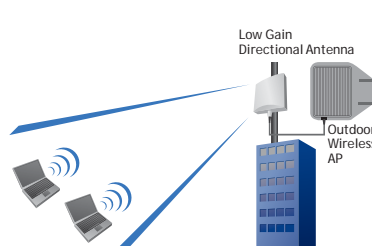There are commonly three types of wireless outdoor applications
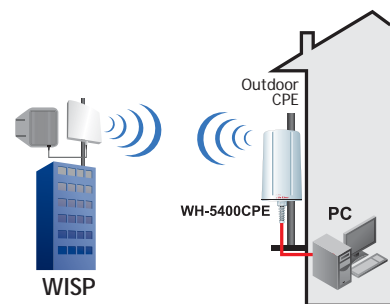
Connecting remote LANs Together

High Gain
Directional Antenna

Outdoor
Bridge

Point-to-Point

Connecting 2 remote office networks together

Provide Wireless Internet Services

Low Gain
Directional Antenna

Outdoor
Wireless
AP

Providing Internet service to outdoor clients

Receive Internet Service from WISP

Outdoor
CPE

WH-5400CPE

PC

WISP

Receiving wireless broadband service from WISP

Step 2: Choosing 2.4GHz or 5GHz

Please check with your local authority first about the legal outdoor WLAN frequencies in your country.

802.11b The 11Mbps WLAN standard that operates in the 2.4GHz using DSSS modulation. 2.4GHz frequency band is more crowded and more prone to interference. However, 2.4GHz can also deliver much further distance at the same output power comparing to 5GHz device. If your distance requirement exceeds 10km or if you have to operate 2.4GHz WLAN in a heavy interference area, we recommend using the 802.11b solution.

802.11g The 54Mbps WLAN standard that operates in the 2.4GHz using OFDM modulation. Although the 802.11g provides the ideal solution for indoor WLAN, there is one important feature to take notice for outdoor applications. If you want to reach more than 800 meter using the 54Mbps mode, please make sure your AP supports adjustable ACK Timeout function. 802.11g devices can also operate in the 802.11b mode.

802.11a The 54Mbps WLAN standard that operates in the 5GHz using OFDM modulation. The 5 GHz frequency band is not as crowded as the 2.4 GHz band. In addition, the 802.11a have 12 non-overlapping channels, comparing to 802.11b/g's 3 non-overlapping channels. However, the 5GHz device delivers far shorter distance at the same output power when comparing to 802.11g. But if higher gain antennas are used, the 802.11a can actually reach higher throughput at longer distance than 802.11g. It is recommended to use this solution if you require higher speed at distance greater than 10km.

Outdoor WLAN Standards				
	Operating Frequency	Advantage	Disadvantage	Note
802.11b	2.4GHz	Better long distance stability, Less prone to interference than 802.11g	Only 11Mbps speed	
802.11g	2.4GHz	54Mbps speed at 2.4GHz band	More prone to interference. Less suitable for distance longer than 10km	Can also operate in 802.11b mode. ACK Timeout adjustment required for long distance.
802.11a	5GHz	54Mbps Speed at the quieter 5GHz band. Higher throughput at longer distance.	Shorter distance than 2.4Ghz at the same output power. 5Ghz frequency band restricted in more countries.	ACK Timeout adjustment required for long distance.

Step 3: Choosing the Right Antennas

There are commonly three types of wireless outdoor applications

Directional Antenna

Direction Antennas have limited angles of field in both horizontal and vertical direction. Because they do not have to cover 360 horizontal degrees like Omni antennas, directional antennas can have higher gain and wider vertical coverage. Directional antennas are available in Patch, Grid, or Yagee designs.

Omni Antenna

Outdoor omni antennas are also known as GP antennas. An outdoor omni antenna provides a near 360-degree horizontal coverage. However, the vertical coverage angles are typically much narrower than directional antennas. As a result, omni antennas are more suitable for environments that are roughly at the same height to each other. Omni antenna higher than 12dBi are not recommended due to their very narrow horizontal angle.

### Antenna basic facts

Higher gain isn't always better:

If the distance between 2 stations is relatively short and an over-powering AP/antenna combination is used, it can induce severe performance lost due to Near-Field-Effect. In addition, higher gain also means narrower degree of field.

Wider Angle isn't always better:

An antenna with narrower degree is more difficult to align, but receive less noise from outside. This is particularly important for point-to-point installation. In an outdoor connection, 2 remotes sites not only have to be in the line-of-sight, but obstacles in the First Fresnel Zone can also reduce the performance. A wider angle of field increases the angle of the First Fresnel Zone.

GP antennas are not for Outdoor AP use:

A high gain GP antenna looks similar in appearance to indoor Dipole antennas. While it has a near 360-degree horizontal degree, the vertical coverage is usually 10 degree or less. Therefore, the idea to put a GP antenna on top of the building and the surrounding area will receive signal is false.

Visual Line of Sight   Radio Line of Sight

First Fresnel Zone
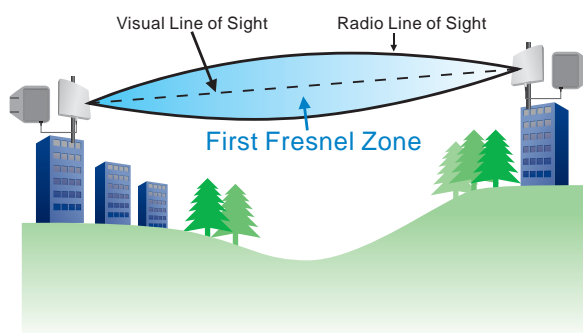
Step 4: Choosing the Right Cables

When a RF signal travel across an antenna cable, there is always a significant amount of cable loss. Therefore, the final output level of an outdoor AP/Bridge is influenced greatly by the length and quality of the antenna cables. Depending on your budget, a high quality cable is also significantly more expensive.

Cable Type	Cable Loss (dB/meter)
OEM RLA-10	0.22
Beldem H1000	0.22
Cavel RG-213	0.37
Belden H155	0.50
Times LMR-195	0.50
Andrew CN-195	0.50
OEM LX-195	0.65
OEM RG-58	1- 1.5

Step 5: Important Software Features

TX Power Regulation

For countries that impose limit on WLAN output power, it might be necessary to reduce TX (transmit) power. The legal limit is measured as the output power at antenna end. Please check with your local authority about RF Power allowed in your country.

Output Power at Antenna End = (AP Output Power + Antenna Gain) - Cable Loss - Connector Loss -Lightening Protector Loss

ACK Timeout

When a packet is sent out from one wireless station to the other, it will waits for an Acknowledgement frame from the remote station. If the ACK is NOT received within that timeout period then the packet will be re-transmitted resulting in reduced throughput. If the ACK setting is too high then throughput will be lost due to waiting for the ACK Window to timeout on lost packets. By having the ability to adjust the ACK setting we can effectively optimize the throughput over long distance links. This is especially true for 802.11a and 802.11g networks.

Wireless Outdoor
802.11a CPE and AP

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802.11a 108Mbps All-in-One Bridge/AP/CPE

The WHA-5500CPE is a family of Wireless Outdoor Multi-function CPEs that are designed to make wireless outdoor installation simple and affordable. They feature weather proof housing, integrated antenna, or complete POE kit. The powerful software features make installation and maintenance simple for the administrators. Each package comes with video installation guide to get your units up and running quickly. The family features 3 different models:

- WHA-5500CPE, all-in-one multi-function 802.11a CPE with 18dBi 5GHz Antenna*.
- WHA-5500CPE-NT, multi-function 802.11a/b/g Access Point with N-Type antenna connector**
- WHA-5500CPE-PCBA, 802.11a Wireless AP PCBA only

Weather Proof Housing***
The WHA-5500CPE has an outdoor housing that is rain proof. The multi-compartment design ensures water vapor has an escape route to prevent water moisture build up. Best of all, it uses regular RJ-45 connection cable to reduce cost.

Atheros 108Mbps 11a/b/g Radio
The WHA-5500CPE family features 108Mbps Atheros radio that is suitable for long distance operation. AirLive has specially fine tune the radio for outdoor application.

Bandwidth Control
Bandwidth Control let operators control the bandwidth of the WISP subscribers. Therefore, the WISP operators can offer different class of connection speeds for different subscription fees - just like the ADSL service.
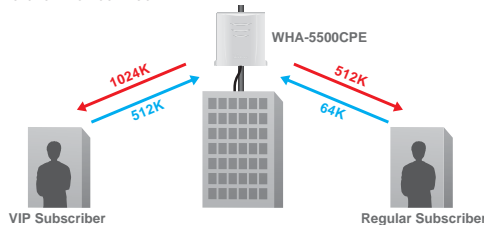
Antenna Alignment Tool
Wireless Signal Survey function tells you the receiving signal strength dynamically as your antenna turns. It automatically refreshes itself in the process, therefore, making antenna alignment much simpler than before.
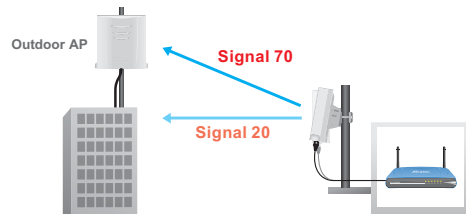
POE Kit
Unlike some low cost CPEs that use short distance passive POE, the WHA-5500CPE includes 802.3af PoE kit to let you power the AP at up to 100 meter away from the power source.
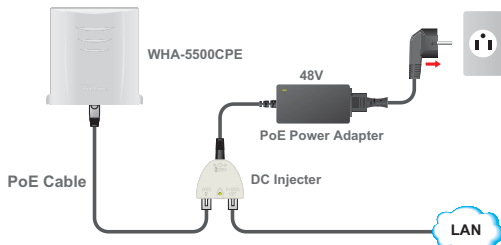
Multiple Operation Mode
The WHA-5500CPE features a total of 6 operation modes. Whether it is for building the wireless backbone, Access Point network, or wireless client; the WHA-5500CPE can cater to your needs.

Mode
AP Mode
Repeater Mode
WDS Bridge
Client Mode
Ad-hoc Bridge
WISP Mode

WHA-5500CPE Family

5GHz 2.4GHz Atheros 108Mbps POE Bandwidth SNMP QoS Multiple SSID VLAN

802.11a Wireless Outdoor CPE

- (WHA-5500CPE/WHA-5500CPE-PCBA): 1 x 108Mbps Atheros 802.11a radio
- (WHA-5500CPE-NT): 1 x 108Mbps Atheros 802.11a/b/g radio
- (WHA-5500CPE/WHA-5500CPE-NT) Weather Proof housing
- 802.3af PoE Kit
- Support Atheros Super A and Super G mode
- 802.11a Wireless Multi-function Bridge/AP/CPE
- Bandwidth Control, Multiple SSID, VLAN
- TOS, QOS, WMM
- WDS Site Survey and RSSI function
- 6 Wireless Operation Modes including AP, bridge, client, router, gateway and repeater
- SNMP, Web, Telnet Functions

WHA-5500CPE / WHA-5500CPE-NT

WHA-5500CPE-PCBA

Ordering Information:

	WHA-5500CPE	802.11a Wireless Multi-function Bridge/AP/CPE with Integrated 18dBi Antenna
PR	WHA-5500CPE-NT	802.11a/b/g Wireless Multi-function Bridge/AP/CPE with N-Type antenna connecter
	WHA-5500CPE-PCBA	802.11a/b/g Wireless Multi-function Bridge/AP/CPE

* Due to the antenna restriction, the WHA-5500CPE runs at 802.11a and Super-A mode only
** The WHA-5500CPE-NT does not have built-in antenna
*** The housing is rain proof only, it is not water proof. Please do not put it into water.

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MESH Technology

Mesh is an outdoor wireless technology that uses Spanning Tree Protocol (STP) and Wireless Distribution system to achieve self-forming, self-healing, and self-configuring outdoor network. MESH networks are able to take the shortest path to a destination that does not have to be in the line of sight.

A MESH AP typically composed of 2 radio modules: one for outdoor AP application, the other for Bridging to another MESH AP. A network of MESH APs will result in Grid like network that provide multiple path from one station to the other. This provides the auto-redundancy capability that is important for WISP operator.
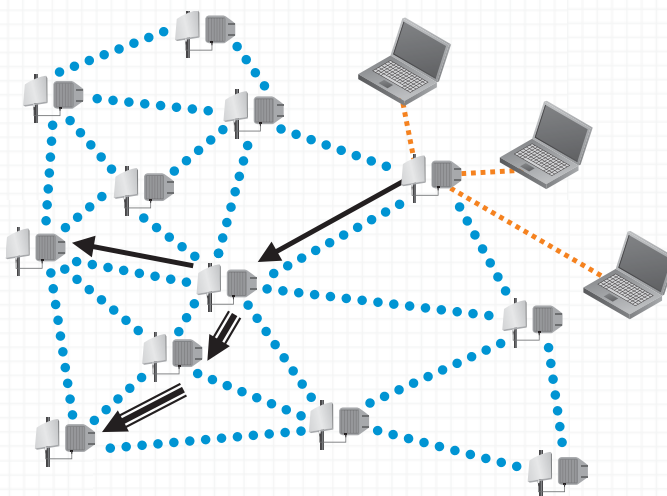
WH-9000MESH / WH-9100MESH

| VLAN | MESH | 5GHz | Dual Radio | WDS | ACK | TX Adjust | SNMP | IP 67 | WMS | Gateway |

Dual-Band MESH AP/Bridge

The WH-9000MESH is a MESH enabled AP with 2 dual-band radios. Therefore, one radio can operate in AP mode while the other in bridge mode. Power by an Intel IXP RISC processor, it has advanced software function such as wireless client load balancing, rogue AP detection, ACK adjustment, TX adjustment and 802.11i WPA2 encryption.

- **WH-9100MESH:** 802.1Q VLAN, Layer 2 Isolation, Multiple SSID
- Dual Atheros 802.11a/b/g Radio, each 20dBm output power
- 2 sets of N-Type Antenna Connectors
- MESH self-configuring and self-healing capability
- AP, WDS, Bridge modes
- 802.3af POE sets, Pole and Wall Mounting
- TX power adjustment, ACK Timeout, SNMP/Web Management
- IP-67 Weather proof certification

WH-5000A

| 5GHz | TX Adjust | ACK | SNMP | IP 65 |

802.11a/b/g Outdoor AP

The WH-5000A is a rugged IP-65 grade 802.11a/b/g outdoor AP that operates in the full 5GHz spectrum range. The AP features wireless multimode that can operate in AP, Bridge, or Client modes. Advance ACK technology enables the bridge to retain good performance at distance up to 20km.

- Atheros 802.11a/b/g dual band radio
- Bridge, AP, Client Multimode
- ACK Adjustment, WMS utility, Trap Server
- SNMP, Web Management
- IP-65 dust and water-proof certification
- POE sets, Pole and Wall Mounting

WH-5854A

| 5GHz | TX Adjust | ACK | SNMP | IP 68 |

802.11a Wireless Bridge

The WH-5854A is a rugged IP-68 grade 802.11a Outdoor Bridge that operates in the full 5GHz spectrum range. Advance ACK technology enables the bridge to retain good performance at distance up to 20km. Advance windows utility are included to auto discover bridges and help antenna alignments.

- Atheros 802.11a radio, 20dBm(CE) or 23dBm(FCC) output power
- Point-to-Point and Point-to-MultiPoint Bridge Mode
- ACK Adjustment, WMS utility, Trap Server
- Auto Bridge discover, SNMP, Web Management
- IP-68 dust and water-proof certification
- 802.3af POE sets, Pole and Wall Mounting

WH-5400CPE / WH-5400CPE-ESD

`802.11g/b` `Antenna` `Client` `ACK` `WPA` `TX Adjust`

802.11g Wireless Outdoor CPE

The WH-5400CPE is an all-in-one device for outdoor wireless application that includes everything you need to make an outdoor wireless connection. With integrated 12dBi antenna inside the CPE case, it can reach a distance of 3 to 6km distance. The special designed splash proof cap for POE/Ethernet Cable allows the CPE to use conventional outdoor grade UTP cable with RJ-45 connector. The CPE features long distance firmware of ACK value in distance. Standard POE kit is included. The WH-5400CPE-ESD model adds extra ESD Protectior and LED Indicators.

- Atheros 802.11g/b radio, 20dB output power
- Integrated 12dBi patch antenna
- AP, Client, and Bridge modes
- **WH-5400CPE-ESD:** Extra ESD Protectior
- ACK Adjustment, AP finder utility, TX power Adjustable
- Web Management
- POE sets and Pole Mount Kit
- **WH-5400CPE-ESD:** LED Indicators

Optional Accessories:

CAB-25M	Optional 25-meter POE Cat.5 Cable
WMK-5400CPE	Wall Mount Kit

AP Mode	Client Mode	Bridge Mode
Notebook / PC / WH-5400CPE	Outdoor AP / WH-5400CPE / PC / POE Cable	WH-5400CPE / WH-5400CPE
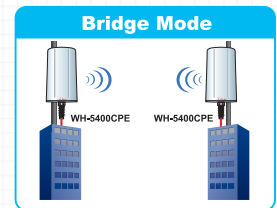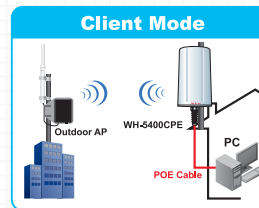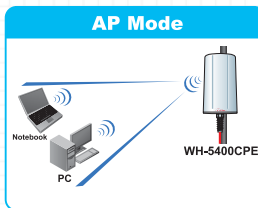
WH-5420CPE *PR*

`802.11g/b` `Antenna` `Client` `ACK` `WPA` `TX Adjust` `SSH` `QoS`

802.11g Wireless Outdoor CPE

The WH-5420CPE is a cost effective all-in-one device for outdoor wireless application that includes everything you need to make an outdoor wireless connection. It features an incredible 8 wireless modes and signal survey for antenna adjustment. With integrated 14dBi antenna inside the CPE case, the CPE is ready to work for long distance application. Standard POE kit is included.

- Realtek 802.11g/b radio, 4MB Flash, 16MB DRAM
- Integrated 14dBi patch antenna
- AP, AP+ Router, Client, WDS, WISP, Universal Repeater modes
- Traffic Bandwidth Control, ACK Adjustment, TX power Adjustable
- SSH2 and Web Management
- POE Kit and Pole Mount Kit included

Optional Accessories:

WH-5420CPE	802.11g/b CPE with 14dBi Integrated Antenna

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Wireless Outdoor Products

WH-5410G-20 / 20PA

| Antenna | ACK | WDS | WPA | TX Adjust | IP 68 |

802.11g Wireless 20dBm Outdoor AP/Bridge

WH-5410G-20   WH-5410G-20PA

The WH-5410G-20 is an 802.11g multi-function AP in a rugged IP-68 outdoor housing. Featuring AP, Bridge, and Client modes in one firmware, you can select modes suitable for your application. The standard features include ACK timeout, TX power adjustment, SNMP, and Web management. The WH-5410G-20PA adds an integrated 18dBi patch antenna in an all-in-one solution, ready to use instantly.

- **WH-5410G-20:** 802.11g Multi-function AP, 20dBm power
- **WH-5410G-20PA:** 802.11g Multi-function AP+ Integrated Antenna
- AP, Client, and WDS modes
- ACK Adjustment, AP finder utility, TX power Adjustable
- SNMP and Web Management
- IP-68 dust and water-proof certification
- POE sets, Pole and Wall Mounting kit

WH-5410G-30

| ACK | WDS | WPA | TX Adjust | IP 68 |

802.11g Wireless 30dBm Outdoor AP/Bridge

The WH-5410G-30 is an 802.11g multi-function AP in a rugged IP-68 outdoor housing. Featuring AP, Bridge, and Client modes in one firmware, you can select modes suitable for your application. The standard features include ACK timeout, TX power adjustment, SNMP, and Web management.

- 802.11g Multi-function AP, 30dBm power
- AP, Client, and WDS modes
- ACK Adjustment, AP finder utility, TX power Adjustable
- SNMP and Web Management
- IP-68 dust and water-proof certification
- POE sets, Pole and Wall Mounting kit

WHB-1100/WHP-1100

| WMS | WEP | IP 68 | SNMP |

802.11b Wireless 20dBm Outdoor AP/Bridge

The WHB-1100 and WHP-1100 is the most tested outdoor AP/Bridge is the industry. They are famous for their uncompromising stability over long distance. The included WMS utility features an antenna alignment tools that shows the data rate as you move to align the antenna. The durable IP-68 certified weatherproof housing makes the outdoor AP/Bridge suitable for the most extreme environments.

- **WHB-1100:** 802.11b Outdoor Bridge
- **WHP-1100:** 802.11b Outdoor AP
- 20dBm Power Output
- WMS utility, antenna alignment, central management
- SNMP Management
- IP-68 dust and water-proof certification
- POE sets, Mounting kit, Lightning Protector

WHB-1120/WHP-1120

| Antenna | WMS | WEP | IP 68 | SNMP |

802.11b Wireless 20dBm All-in-One Outdoor AP/Bridge

The WHB-1120 and WHP-1120 is the perfect all-in-one outdoor wireless solution. In addition to the try-and-true wireless AP core, it also includes an 18dBi patch antenna and lightning-protector. Therefore, you don't need to shop around for other accessories. They are ready to go. The durable IP-68 certified weatherproof housing makes the outdoor AP/Bridge suitable for the most extreme environments.

- **WHB-1120:** 802.11b Outdoor All-in-One Bridge
- **WHP-1120:** 802.11b Outdoor All-in-One AP
- 20dBm Power Output, 18dBi Integrated Antenna
- WMS utility, antenna alignment, central management
- SNMP Management
- IP-68 dust and water-proof certification
- POE sets, Mounting kit, Lightning Protector

WHB-1130/WHP-1130

| WMS | WEP | IP 68 | SNMP |

802.11b Wireless 30dBm Outdoor AP/Bridge

The WHB-1130 and WHP-1130 is the most high-powered outdoor AP/Bridge is the industry. With 1-Watt output power, they can reach far distance with high stability. The included WMS utility features an antenna alignment tools that shows the data rate as you move to align the antenna. The durable IP-68 certified weatherproof housing makes the outdoor AP/Bridge suitable for the most extreme environments.

- **WHB-1130:** 802.11b Outdoor Bridge
- **WHP-1130:** 802.11b Outdoor AP
- 30dBm (1 Watt) Power Output
- WMS utility, antenna alignment, central management
- SNMP Management
- IP-68 dust and water-proof certification
- POE sets, Mounting kit, Lightning Protector

Wireless Outdoor
Wireless Accessories

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

Power over Ethernet

For applications that require user to put a network device (such as AP) in a place where there is no electrical outlet available, the Power over Ethernet is the best solution. Power over Ethernet allows both data and electricity to be transmitted over a Cat.5 cable at up to 100 meter of distance. This allows electronic devices to be placed in the outdoor or difficult to reach places. Therefore, POE is not only for wireless application, but also for any DC-powered device.

POE Consist of 2 major components

Application

1 DC Injector (Base Unit) :

The DC Injector takes the electricity from the Power Adapter and the data from the Ethernet network, then combined them into a signal that can be transmitted through the UTP/STP cable.

2 Splitter (The Terminal Unit):

The splitter takes the combined Signal from the Base Unit and separate them back to data and electrical signal. In the process, it converts the voltage into the voltage used by the electronic device.

802.3af

The IEEE 802.3af defines the 48 volt POE standard that enables the cable distance to reach 100 meter. Proprietary solutions that use 12vdc can only reach between 30m to 50m distance.

Package Include
1 Power Adapter
2 Base Unit (Injector)
3 Terminal Unit (Splitter)
4 DC Power Card
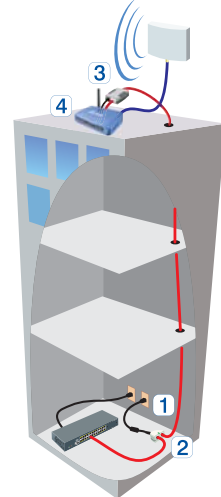
AirLive POE-100 Family

The AirLive POE-100 family provides the most complete Power over Ethernet solutions in the industry. Compliant with the IEEE 802.3af standard, it can supply power to remote devices 100 meter away from the power source. Available in 5volt, 9 volt, or 12 volt packages; it is virtually compatible with all the DC-powered devices. Splitter, Inject, and power adapter can also be sold separately.

- **POE-105:** 5Vdc/2.4A output POE Package
- **POE-103:** 3.3Vdc/3A output POE Package
- **POE-112:** 12Vdc/1A output POE Package
- **POE-109:** 9Vdc/1.3A output POE Package

Lighting Protector

The WLP Lightning protectors provide safety for your wireless equipments from Lightning strikes and electrical induction. If you setup your wireless antenna in open space or rooftop, the antenna can be susceptible to Lightning strike or proximal electrical induction. The Lightning protector will re-direct the electrical current to the ground to safeguard your equipments.   Please make sure both your lighting protector and AP are properly grounded.

- **WLP-90MF:** 2.4GHz N-type male to female
- **WLP-90MFB:** 2.4GHz N-type male to female, bulkhead
- **WLP-90FF:** 2.4GHz N-type female to female
- **WLP-90FFB:** 2.4GHz N-type female to female, bulkhead
- **WLP-50MF:** 5GHz N-type male to female
- **WLP-50FF:** 5GHz N-type female to female
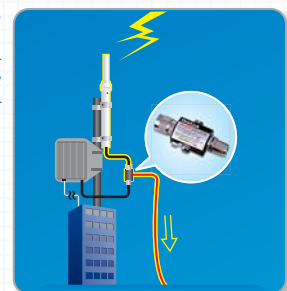
Antenna Splitter

The WSP series of signal splitter allows user to attach more than one antenna by providing 2 N-type connectors. For application where users need to use more than 1 patch antenna to get more wider coverage, the WSP is the perfect choice.

- **WSP-2F:** 2.4GHz Signal Splitter, N-type
- **WSP-2F-WP:** 2.4GHz Weather-Proof Signal Splitter

AirLive
Powered by OvisLink Corp.

Wireless Accessories

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

2.4Ghz Outdoor Antennas

WAE-085GP

- 8.5dBi GP Antenna
- Omni Directional
- Horizontal Coverage: 360 degree
- Vertical Coverage: 15 degree

WAE-2415GP

- 2.4Ghz 15dBi Outdoor GP Antenna
- High gain Omni antenna for wide coverage
- Outdoor point-to-multipoint deployment use

WAE-140PA v2

- 14dBi Outdoor Patch Antenna
- Female N-Type Connector
- Outdoor Bridge Use

WAE-210PA

- 21dBi Patch Antenna
- Directional Antenna
- Horizontal Coverage: 15 degree
- Vertical Coverage: 20 degree

WAE-180PA v3

- 18dBi Outdoor Patch Antenna
- Female N-Type Connector
- Outdoor Bridge Use
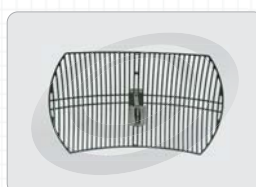
WAE-2424GR

- 24dBi Grid Antenna
- Directional Antenna
- Horizontal Coverage: 11 degree
- Vertical Coverage: 9 degree

5Ghz Outdoor Antennas

The AirLive 5GHz antennas are 5.15~5.825 GHz full range wireless panel antennas constructed of heavy wind resistant material. Unlike other low quality antennas that will flex in the wind and cause frequent signal loss. They provide rock solid stability that can withstand strong wind at up to 216Km/h. Pole mount and wall mount kits are included.

WAE-509GP

- 9dBi GP Antenna
- 5.15GHz ~ 5.875GHz
- Omni Directional

WAE-5018PA

- 18dBi Panel Antenna
- 5.25GHz ~ 5.875GHz
- Horizontal: 18 degree
- Vertical: 18 degree

WAE-5014PA

- 14dBi Panel Antenna
- 14 dBi: 5.35~5.875GHz
- 12 dBi: 5.15~5.35GHz
- Horizontal: 25 degree, Vertical: 25 degree

WAE-5023PA

- 23dBi Panel Antenna
- 5.15GHz ~ 5.875GHz
- Horizontal: 9 degree
- Vertical: 9 degree

WAE-5024GR

- 24dBi 5GHz Wireless Antenna
- Mounting Kits included
- Directional to focus for longer distance
- Designed for outdoor bridge use
- Strong Wind Resistant

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

A Force that Changed the World

The Internet that has brought the world together has undergone great changes due to the dramatic advance in broadband technology. From the day of analogue modem to today's 24Mbps ADSL 2+ connections, OvisLink Corp. has been along the path to understand the need of the broadband customers. That's why all our ADSL products feature automatic setup that even someone who has little experience can setup in a short time. That's why we developed the F-Type router that is compatible with all the major ISP around the world and feature advance passive cooling designed for round-the-clock reliability. From basic broadband router to the advance VPN routers, the AirLive broadband series are designed to make complicated technologies simple.

Broadband Specification Table

Model No.	Page Number	Pre-Annouced Product	Wireless Standard	MIMO	Turbo Mode	LAN Port	WAN Port	USB Port	Buit-in ADSLModem	Detachable Antenna	ADSL 2 / 2+	Annex M	Auto ISP Setup	USB Adapter	DHCP/Fixed IP	PPPoEISP Dialup	PPTP ISP Dialup	L2TP ISP Dialup	Big Pond Cable	Wireless Client Isolation
						Hardware					**ADSL**		**ISP Support**							**Extra**
Wireless Broadband Router																				
WN-5000R v2	11		11b/g/n	●		4	●								●	●	●	●	●	●
WT-2000R	15		11g/b		T	4	●			●					●	●	●	●	●	●
WL-1500R	17		11g/b			4	●			●					●	●	●	●	●	
WMM-3000R	14		11g/b	●	T	4	●			●					●	●	●	●	●	●
Wired Broadband Router																				
IP-1000R	35					4	●								●	●	●	●	●	
IP-2000VPN	61					3	●								●	●	●	●	●	
ADSL Router																				
ARM-201	33	●				1	●	1	●		●	●	●	1	●	●				
ARM-204 v2	33	●			T	4	●	1	●		●	●	●	1	●	●				
WT-2000ARM	35		11g/b		T	4	●		●		●	●	●		●	●				

● Yes   **S** Super G mode   **T** Turbo G Mode

Setting an ADSL Router to Modem Mode

If your ISP provides you with an ADSL router, it means you can not attach another router or gateway to it. To remedy the situation, you can set the ADSL router to modem mode. Please consult with your ADSL router's user's guide first before attempting to perform the procedure.

Please find out what is the "encapsulation" used by your ISP. You can usually find the setting in your ADSL's router' ADSL configuration page.

Encapsulation: PPPoE

PPPoE Router Mode

Turn Off the DHCP
Turn off the NAT

Now, user can connect Broadband Router behind the LAN port. Set the broadband Router's WAN port to PPPoE mode

Change the Encapsulation From PPPoE to 1483 Bridge BUT Keep the VPI and VCI settings.

Turn the Bridge Mode ON

Encapsulation: 1483 Routed

1483 Routed Router

Turn Off the DHCP
Turn off the NAT

Now, user can connect Broadband Router behind the LAN port. Set the broadband Router's WAN port to Fixed IP mode. Enter the real IP provided by the ISP in the WAN port of the broadband Router.

Turn off the Bridge Mode

In the LAN IP, Enter the ISP' Gateway. Change the Subnet Mask to ISP's.

Encapsulation: 1483 Bridge

1483 Bridge Router Mode

Turn Off the DHCP
Turn off the NAT

Set the broadband Router's WAN port to PPPoE or fixed IP mode

Turn on the Bridge Mode

Now, user can connect Broadband Router behind the LAN port.

Encapsulation: PPPoA

PPPoA Router mode

Make sure the ADSL router Is working fine in router Mode

Now, user can connect Broadband Router behind the LAN port. Set the broadband Router's WAN port to DHCP Mode

Go to Advance-> Misc. Configuration

Turn on the PPP Half Bridge Mode

Auto Setup Wizard

Traditionally, setting up an ADSL modem router will require user to input parameters such as Encapsulation, VPI, VCI, Handshake protocols and more…. This procedure intimidates average users who might find the parameter values difficult to obtain. With the special AirLive auto setup program, you no longer have to deal with the complex ADSL parameters. Just tell the program which country and ISP you are using and enter the ISP's login and password. Then the router is ready to work. All AirLive ADSL products are equipped with this feature.

Simply Installation
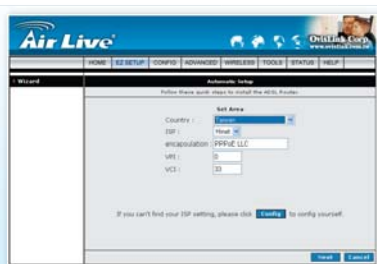
Select your country and ISP

Enter your ISP account information

Finished!

Broadband
ADSL Products

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

WT-2000ARM

| Vista | Turbo-G | ADSL2/2+M | Annex A/B/M | WPA2 |

Turbo-G Wireless ADSL 2/2+/2+M Router

The WT-2000ARM is a Turbo-G wireless router that has a built-in ADSL2/2+/2+M modem. The fast Turbo-G wireless speed matches with the 24Mbps ADSL2+M speed perfectly. It comes with an auto-install wizard that will make ADSL installation very easy. Just select your country and ISP, then enter your account information. That's all!

- 4 x 10/100Mbps LAN ports
- 1 x ADSL RJ-11 port
- Turbo-G Wireless
- ADSL, ADSL2, ADSL 2+, ADSL2+M supports
- Auto CD Setup Wizard

ARM-204 v2

| Vista | Auto Settup Wizard | USB | ADSL 2/2+M | Annex A/B/M |

4 Ports Wired ADSL 2/2+/2+M Router

The ARM-204 v2 is an ADSL router that has a built-in ADSL2/2+/2+M modem. It comes with an auto-install wizard that will make ADSL installation very easy. Just select your country and ISP, then enter your account information. That's all!

- 4 x 10/100Mbps LAN ports
- 1 x ADSL RJ-11 port
- 1 x USB port
- ADSL, ADSL2, ADSL 2+, ADSL2+M supports
- Auto CD Setup Wizard

ARM-201

| Vista | Auto Settup Wizard | USB | ADSL 2/2+M | Annex A/B/M |

1 Port Wired ADSL 2/2+/2+M Router

The ARM-201 is an ADSL router that has a built-in ADSL2/2+/2+M modem. It comes with an auto-install wizard that will make ADSL installation very easy. Just select your country and ISP, then enter your account information. That's all!

- 1 x 10/100Mbps LAN ports
- 1 x ADSL RJ-11 port
- 1 x USB port
- ADSL, ADSL2, ADSL 2+, ADSL2+M supports
- Auto CD Setup Wizard

What is Annex A and AnnexB?

Annex A: The ADSL standard that uses analogue telephone line (POTS)

Annex B: The ADSL standard that uses ISDN telephone line.

U-R2: The Deutsch Telecom's Annex B standard.

ADSL Speed Comparison

ADSL Standard	Maximum Downstream	Maximum Upstream
ADSL (G.Lite)	1.5 Mbps	512 Kbps
ADSL (G.dmt)	8 Mbps	1 Mbps
ADSL 2	12 Mbps	3.5Mbps
ADSL 2+	24 Mbps	1Mbps
ADSL 2+(Annex L)*	24 Mbps	1Mbps
ADSL 2+ (Annex M)	24 Mbps	3.5Mbps

*Annex L increases distance, not speed

The F-Type Router

*T*he F-Type routers are one of the best-designed routers in the industry. Complete with seven different models, they have features to satisfy all your broadband needs. From the beautiful housing to the worldwide ISP compatibility, they are surely your best choice for IP sharing solutions.
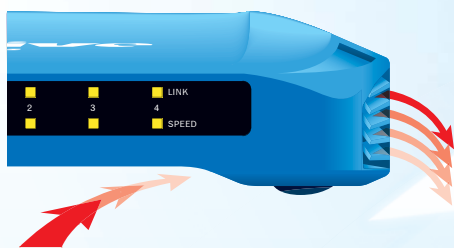
Exquisite Design

The F-Type housing is the latest creation by the renowned AirLive Industrial Design Studio. Crafted with sumptuous curves running across the awe-inspiring body, it is truly a piece of modern art to behold. The large surface of air-cooling ducks allows air to run freely into the router from below, then go out to the stylish air grills on the side. The side fins are angled 45 degree downward to prevent dust from entering the router. The end result is a router that can breath freely for reliable long hour operation.

Detail to Attention

The F-Type routers have special software features that make them powerful yet simple to use. The auto wizard setup walks you through most ISP setup procedures. The triple AirLive Guard security not only provides encryption but also wireless client isolation. Wake-On-LAN, SNMP and 802.1x radius function are standard across the board. But most of important of all, the F-Type router features 6 different ISP authentication methods that make them compatible with virtually all the ISP in the world.
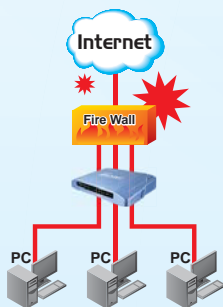
Firewall

Scheduled policy

Sunday 7:00~1500
Monday 7:00~1500

WN-5000R v2

`Vista` `WPS` `802.11N` `MIMO` `WDS` `300 Mbps` `WPA2`

802.11n Wireless Router

The WN-5000R v2 is an advance wireless router that uses the latest 802.11n technology. This mean your file transfer speed can be up to 120Mbps in real throughput! Over 6 times faster than standard 802.11g device! It uses the MIMO-G technology to provide ultra high speed and wireless coverage. The AP has 4 LAN ports to let you put more than one wired device for sharing.

- 4 x 10/100Mbps LAN ports
- 802.11n Speed, Up to 6 times faster than wireless-G!
- PPTP, L2TP, PPPoE, DHCP, Fixed, Bigpond ISP supports
- WPS push button support
- WDS repeater function, WEP, WPA, WPA2
- 802.11e, 802.11d, 802.11h, and WMM support

WMM-3000R

`MIMO` `Routing` `WDS` `802.1x` `WPA2` `Hide SSID` `SNMP` `Isolation`

MIMO-G Wireless Broadband Router

The WMM-3000R is an advance wireless router using the MIMO-G technology to provide ultra high speed and wireless coverage. Featuring phenomenon 95Mbps routing speed, it also supports all ISP authentications around the world. Advanced wireless functions such as 802.1x radius, client isolation, and WPA2 are included. In addition, WDS repeater allows users to extend the wireless range with another AP.

- 4 x 10/100Mbps LAN ports
- Dual Antenna and Radio, 802.11g/b compatible
- PPTP, L2TP, PPPoE, DHCP, Fixed, Bigpond ISP supports
- Client isolation, Hide SSID, 802.1x radius, SNMP
- WDS repeater function, WEP, WPA, WPA2
- 802.11e, 802.11d, 802.11h, and WMM support

WT-2000R

`Turbo-G` `Routing` `WDS` `802.1x` `WPA2` `Hide SSID` `SNMP` `Isolation`

Turbo-G Wireless Broadband Router

The WT-2000R is an advance wireless router using the Turbo-G technology to provide ultra high speed and wireless coverage. Featuring phenomenon 95Mbps routing speed, it also supports all ISP authentications around the world. Advanced wireless functions such as 802.1x radius, client isolation, and WPA2 are included. In addition, WDS repeater allows users to extend the wireless range with another AP.

- 1 WAN + 4 x 10/100Mbps LAN ports
- Turbo-G technology, 802.11g/b compatible
- PPTP, L2TP, PPPoE, DHCP, Fixed, Bigpond ISP supports
- Client isolation, Hide SSID, 802.1x radius, SNMP
- WDS repeater function, WEP, WPA, WPA2
- 802.11e and WMM support

WL-1500R

`Vista` `Routing` `Security Filter` `802.11g` `WPA` `XR` `WPA2`

802.11G Wireless Broadband Router

The Wl-1500R is a high performance and simple to use 802.11g Wireless router that features Athero's eXtended Range support. That means longer distance can be achieved when operating with other XR compliance equipment. The router supports virtually all major ISP in the world. In addition, comprehensive filtering function allows parent to stop children from surfing unwanted website.

- 4 x 10/100Mbps LAN ports
- 802.11g/b Wireless
- Athero's XR support
- PPTP,L2TP,PPPoE,DHCP,Fixed, Bigpond ISP supports
- WEP,WPA,WPA2 supports
- TTL, Hide SSID supports

IP-1000R

`WOL` `SNMP`

Wired Broadband Router

The IP-1000R is a broadband router with phenomenon 95Mbps routing speed for even the high speed FTTH broadband service. In addition, SPI firewall with syslog and scheduling are provided as standard. The router features PPTP, L2TP, PPPoE, DHCP, Fixed, Bigpond ISP supports for compatibility with most of the world's ISP.

- 1 x WAN port + 4 LAN ports
- PPTP, L2TP, PPPoE, DHCP, Fixed, Bigpond ISP supports
- Wirespeed Routing, Wake-On-LAN
- SNMP, Syslog, Scheduled Firewall

Wireless LAN · Wireless Outdoor · Broadband · Multimedia · Ethernet Products · Security Products · Powerline · VoIP

Turning Brilliant Ideas into Reality

In 2004, OvisLink Corp. released our WMU-9000VPN multimedia router that stunned the networking industry with multimedia features never seen before in an all-in-one device. With its integrated FTP, Camera, QoS, Printer, and VPN servers, it stands out among over 100 competitors to win the 2004 Best of Computex Award. Today, our expertise in multimedia continues in our Wireless HD, IP Camera, Bluetooth and Print Server lines. The latest WMU-6500FS combines NAS, Wireless HD, Download Agent, FTP Server, and OTG function into one device that performs at 2 times the speed of competitor's products. Our MFP server not only allow users to share a multi-function printer, it also have a built-in print server for simultaneous printing. At OvisLink Corp., we are experts at turning exciting ideas into reality.

Multimedia Product Table

Model No.	Page Number	Pre-Annouced Product	Wireless Standard	2.4GHz Frequency	Multimode AP	HDMI Port	Output Power(dBm)	S-video Port	Sata Port	LAN Port	USB Port	2 Way Audio	IR	Parralel Port	Detachable Antenna	Samba Server	FTP Server	Hard Drive Enclosure	Directory Authentication	FAT/FAT32	EXT2	Print Server Function	Multi-Function Support	Internet Printing	SNMP	Print Server Function	Multi-Function Support	Internet Printing	SNMP	Motion JPEG	MPEG-4	Surveillance Software	Recording Software	UPnP	Mobil Phone Video	Motion Detection E-mail Alert	Pan and Tilt	Music PlayBack	Video Play Back	itune Server	Bit Torrent download Agent	Remote Control	UPnP AV Media Server Support	DVBT
							Hardware									Storage						Printer				Operating Mode				Camera								Multimedia Feature						
Storage Media																																												
WMU-6000FS	38		11g/b	●	●					1	2					●	●	●	●	●	●	●				●								●								●	●	
WMU-6500FS	37		11g/b	●	●				●	1	2					●	●	●	●	●	●	●				●								●								●	●	●
MU-5000FS	38									1	2					●	●	●	●	●	●																							
WMU-7000AV	38	●	11g/b	●		●		●	●	1	1						●			●						●								●				●	●				●	
MU-7000AVs	37					●		●	●	1	1						●			●						●												●	●				●	
DVB-T																																												
AirTV-1000U	44								●																																			●
Video Projector Server																																												
AirVideo-2000	45		11g/b	●						1								●								●								●								●		
Home Entertainment Media																																												
AirMedia-3000	39	●	11g/b	●		●		●		1	2						●									●								●				●	●				●	
Wireless IPCAM																																												
WL-5400CAM	42		11g/b	●						1								●										●				●		●	●	●		●	●					
WL-5420CAM	42		11g/b	●						1								●										●						●	●	●	●			●				
WL-5460CAM	42		11g/b	●						1								●										●						●	●	●	●			●	●			
WL-1000CAM	43	●	11g/b	●						1								●										●						●	●	●	●			●				
WL-1200CAM	43	●	11g/b	●						1		●						●										●						●	●	●	●	●		●	●			
WL-2000CAM	43	●	11g/b	●						1		●	●					●										●						●	●	●	●	●		●	●			
WL-2600CAM	43	●	11g/b	●						1		●	●					●										●				●	●	●	●	●	●	●	●	●	●			
Wireless Print Server																																												
WFP-101U	40		11g/b	●			20			1	1							●					●	●	●	●	●								●									
WP-201G	41		11g/b	●			20			1	1							●					●		●	●	●		●	●					●									
WP-203G	41		11g/b	●			20			1	2			1				●					●		●	●	●		●	●					●									
Wired Print Server																																												
MFP-101U	40									1	1							●					●	●	●	●	●																	
P-201U	41									1	1							●					●		●	●	●																	
P-201	41									1	1							●					●		●	●	●																	
P-203N	41									1	2							●					●		●	●	●																	

● Yes

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

Multimedia
Multimedia Storage

Multimedia Storage

Samba Server

Linux Samba server provides the ability to let Windows users access the storage by using Microsoft Network. It makes the storage available as a network drive in "My Network." This is the best and easiest way for hard drive sharing inside the LAN.

FTP Server

FTP server let users share files on the Internet. User can access a file by typing its FTP location in a web browser.

OTG

On-The-GO. OTG function gives a portable Hard Drive the ability to back up content from memory cards into the hard drive. Thus, freeing the memory cards for other usage.

WMU-6500FS

| Vista | Bit Torrent | SATA | IDE | 125Mbps Turbo-G | FTP Server |

3.5" Turbo-G Wireless HD+BT Download Agent

The WMU-6500FS is the all-in-one wireless hard drive to handle file download and file sharing wirelessly. Therefore, you don't need to turn on your PC 24-hours per day to download or share files anymore. The WMU-6500FS does it all for you! It has built-in BitTorrent, FTP, and HTTP Download agents. The device support either 3.5" SATA or IDE hard drive interface*. The built-in Turbo-G wireless mode double the wireless throughput when using with other Turbo-G devices.

- 125Mbps Turbo-G Wireless Function
- Compatible with standard 11g and 11b device
- 3.5" Hard Drive Bay
- 2 x USB 2.0 port for USB memory device
- OTG function
- SATA or IDE Interface
- Samba File Sharing
- FTP server
- Bit Torrent Download Agent
- FTP and HTTP Download Agent

Wireless File Sharing

WMU-6500FS

NoteBook　　**PC**

Automatic File Download

BiTorrent　　HTTP　　FTP

WMU-6500FS

Internet

File Download From Internet　**Wireless Router**
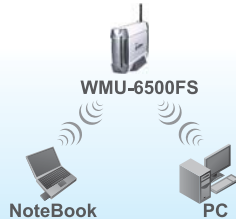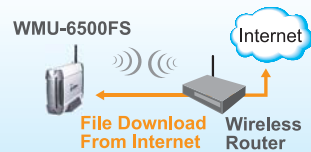
* This device does not contain Hard Drive unless otherwise indicated

MU-7000AVs

| Vista | MPEG | MPEG2 | MPEG4 | DivX | SATA | IDE | 3.5" |

3.5" Multimedia Network Hard Drive

The MU-7000AVs is a Multimedia Network hard drive that can playback video and share files. Connect MU-7000AVs directly to your TV, then you can playback video and audio files directly. Just turn on the MU-7000AVs and use the included remote control, you can watch video and listen to music files directly on your TV. No more need to burn expensive DVD disk! The MU-7000AVs not only support video files, you can also playback pictures and music files on your TV.

- Multimedia Network Hard Drive Enclosure*
- 1 Video + 1 Audio Port
- 1 x RJ-45 Ethernet Port
- Support 3.5" IDE and SATA Drive
- Support MPEG, MPEG2, MPEG 4 video format
- Play back AVI, MPG, DAT, VOB, DivX, Xvid 5.0,MP3, JPG, motion JPEG files
- NTSC and PAL Support
- S-Video and RCA Connector
- USB 2.0 port for direct connection with PC
- Remote Control Included

- Video
- Music
- Photo

- Video
- Music
- Photo

MU-7000AVs
Multimedia Player

WMU-6500FS

Internet

BiT Torrent
BT download without PC

ADSL Router

File back up

- iTune Server
- Photo Albam

* This device does not include Hard Drive unless otherwise indicated.

www.airlive.com　37

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Wireless Outdoor

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Multimedia

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VoIP
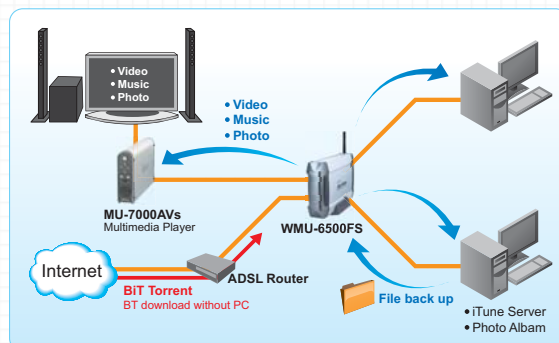
WMU-7000AV `PR`

| Wireless | Vista | MPEG | MPEG2 | MPEG4 | DivX | SATA | IDE | 3.5" |

3.5" Wireless Multimedia Network Hard Drive

The WMU-7000AV is a Wireless Multimedia Network hard drive that can playback video and share files. Connect WMU-7000AV directly to your TV, then you can playback video and audio files directly. Just turn on the WMU-7000AV and use the included remote control, you can watch video and listen to music files directly on your TV. No more need to burn expensive DVD disk! The WMU-7000AV not only support video files, you can also playback pictures and music files on your TV.

- 802.11g/b Wireless Support
- Multimedia Network Hard Drive Enclosure*
- 1 Video + 1 Audio Port
- 1 x RJ-45 Ethernet Port
- Support 3.5" IDE and SATA Drive
- Support MPEG, MPEG2, MPEG 4 video format

- Play back AVI, MPG, DAT, VOB, DivX, Xvid 5.0,MP3, JPG, motion JPEG files
- NTSC and PAL Support
- S-Video and RCA Connector
- USB 2.0 port for direct connection with PC
- Remote Control Included

This device does not include Hard Drive unless otherwise indicated.

WMU-6000FS

| Vista | 802.11G | AP | Client | WDS | Samba | FTP | OTG |

802.11g Wireless HD

The WMU-6000FS is a multi-function server device from AirLive. Featuring an internal 2.5 inch IDE drive bay, it can share the hard drive wirelessly at up to 48Mbps speed - 2X the speed of its competition. That makes it extremely suitable for video and audio file sharing. In addition, 2 USB 2.0 ports are available for direct storage sharing. Moreover, the unit also features an multi-function AP that can work in AP, Client, or WDS mode. Finally, we add the FTP server, and OTG functions all-in-one to make it the most desirable multi-function device in the market.

Internal 2.5" IDE Drive Bay

- 54Mbps Wireless multi-function AP
- AP, WDS, Bridge mode
- Internal 2.5" IDE Drive Bay*
- Samba, FTP, OTG servers

- Support FAT32 or EXT2 file format
- One Touch OTG Backup Function
- Bit Torrent Download Agent
- 2 x USB 2.0 Ports

Hard Drive not included

Wireless File Sharing

WMU-6000FS

NoteBook   PC

Automatic File Download

BiTorrent   HTTP   FTP

Internet

File Download From Internet

WMU-6000FS   Wireless Router
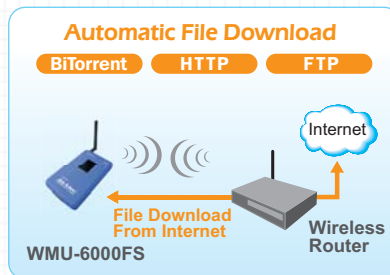
MU-5000FS

| Samba | FTP |

Network File Server

The MU-5000FS is a cost effective network file server that allow you to attach external USB storage and CD-ROM drives for sharing. Featuring USB 2.0 ports for up to 8 USB devices, the MU-5000FS feature per-directory authentication that make it suitable for corporate file sharing. The unique scheduled download allow the MU-5000FS to download files from remote sites at pre-defined schedule.

- 2 x USB 2.0 Ports
- Samba and FTP servers
- Support FAT32 format

- Share USB storage and CD-ROM
- Per-directory Authentication
- Scheduled Download from Internet

Wireless Multimedia Server

The AirMedia-3000 is a Wireless-G Multimedia Server that attach to the TV and HIFI. Your Computer can then display the content of screen wirelessly on the TV. It completely remove the need of cables, as you can access computer by using wireless USB Keyboard, Mouse or Remote Control to control your computer while in living room. AirMedia-3000 Support High Definition Multimedia Interface, it can display video clip up to 1080p by using HDMI TV. Best of all, The AirMedia-3000 support Zoom To TV function that allow you to play any of the media format stream to your TV.

Zoom To TV

The AirMedia-3000 support Zoom To TV function that allow you to play any of the media format stream to your TV.

PC

AirMedia-3000

TV

Video-clip Zoom-to-TV

Play your MP3 or Video via USB Memory

Just attach your USB memory stick. The AirMedia-3000 allows you view/watch/listen digital contents stored in your PC or USB drive on your TV.

HD

USB

AirMedia-3000

TV

Remote Desktop

You can access your computer by using wireless USB Keyboard, Mouse or Remote Control to control computer while in living room.

PC in Study room

Videos   Music
Pictures   Browser
News   DVR

PC

Living room

AirMedia-3000

TV

AirMedia-3000 PR

HDMI   Video   USB   Audio   Remote Desktop

AirLive Home Multimedia Centre

- Support 3 USB ports
- Support HDMI, DVI ports
- Watch YouTube videos in full screen on TV
- Zero Configuration
- Play Your Movies and MP3 via USB
- Using Your Wireless Keyboard and Mouse to control Remote PC

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MFP (Multi-Function Printer)

The sales volume of the multi-function printers that integrates printer, scanner, card reader, and FAX machine has surpassed traditional single purpose printers. Because Multi-Purpose printers use mostly proprietary printing protocol, this makes device sharing very difficult. The AirLive MFP server integrates the following features to make MFP printer sharing possible

Virtual USB Port

The MFP utility will install a virtual USB port on your PC. Therefore, the Multi-Function printer will appear as if it is your local USB printers on your PC.

Auto Release Function

Since only one PC can access the Virtual USB Port at once. The MFP server performs task switching between different PCs. Therefore, the MFP server should possess the ability to automatically release the MFP printer when the function is not in used.

Print Server Function

For scanning and faxing, the operations require user to attend to the machine. Therefore, task switching is acceptable. However, the printer sharing function should accept request from all users simultaneously. That's why the AirLive MFP server also integrates a full feature print server function to handle network printer sharing.

The combination of all these features makes AirLive MFP servers the easiest and most complete way to share the printing, scanning, and card reader functions of the multi-purpose printers.

WFP-101U

| Vista | USB 2.0 | 802.11G | MFP | Print Server |
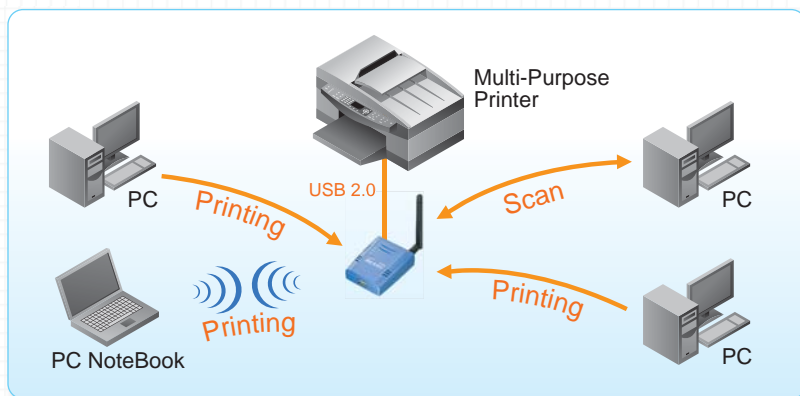
802.11g Wireless MFP Server

The WFP-101 is an advanced wireless MFP server that enables multi-function printers to be shared on the network. With the combination of virtual USB device and print server, it provides seamless MFP sharing. The server supports USB 1.1/2.0 printers and speedy 802.11g wireless network.

- 54Mbps Wireless MFP Server
- 1 x USB 2.0 port
- Printer, Scanner, and Card Reader sharing for Win2000/XP
- Printer sharing for Windows, Mac OS, Linux, Unix, Netware
- Auto timeout disconnect and Administrator force out function
- Supports LPR, IPP, SMB/TCP, Raw Printing and Unix Logical printing protocols.

MFP-101U

| Vista | USB 2.0 | MFP | Print Server |

Wired MFP Server

The MFP-101 is an advanced MFP server that enables multi-function printers to be shared on the network. With the combination of virtual USB device and print server, it provides seamless MFP sharing. The server supports USB 1.1/2.0 printers.

- 1 x USB 2.0 port
- Printer, Scanner, and Card Reader sharing for Win2000/XP
- Printer sharing for Windows, Mac OS, Linux, Unix, Netware
- Auto timeout disconnect and Administrator force out function
- Supports LPR, IPP, SMB/TCP, Raw Printing and Unix Logical printing protocols.

Print Server

P-203N

Vista *SNMP* *UPnP* *Print Server* *USB 2.0*

3-port Wired Print Server

The P-203N is a 3-port print server with 2 USB ports and 1 parallel port. The automatic installation wizard simplifies the installation process for even novice users. Featuring a large memory buffer, it can handle simultaneous jobs from multiple users at once. The Internet printing feature let remote users to send text file by FTP or Email to be printed.

- 2 x USB 2.0 + 1 x Parallel Ports
- UPnP and Installation Wizard
- Remote Internet Printing
- Windows, Netware, Linux, Mac OS, and Unix support
- SNMP, Email notification and Access Control.

P-201

Vista *SNMP* *UPnP* *Print Server*

1-port Parallel Print Server

The P-201 is a print server with one parallel port. It is suitable for office to share a parallel port based Laser Printer. The automatic installation wizard simplifies the installation process for even novice users. Featuring a large memory buffer, it can handle simultaneous jobs from multiple users at once. The Internet printing feature let remote users to send text file by FTP or Email to be printed.

- 1 x Parallel Port
- UPnP and Installation Wizard
- Remote Internet Printing
- Windows, Netware, Linux, Mac OS, and Unix support
- SNMP, Email notification and Access Control.

P-201U

Vista *SNMP* *UPnP* *Print Server* *USB 2.0*

1-port USB Print Server

The P-201U is a print server with one USB 2.0 port for USB printer sharing. The automatic installation wizard simplifies the installation process for even novice users. Featuring a large memory buffer, it can handle simultaneous jobs from multiple users at once. The Internet printing feature let remote users to send text file by FTP or Email to be printed.

- 1 x USB 2.0 port
- UPnP and Installation Wizard
- Remote Internet Printing
- Windows, Netware, Linux, Mac OS, and Unix support
- SNMP, Email notification and Access Control.

WP-203G

Vista *802.11G* *SNMP* *UPnP* *Print Server* *USB 2.0*

3-port Wireless Print Server

The WP-203G is a 3-port wireless print server with 2 USB ports and 1 parallel port. Featuring a powerful 20dBi wireless-G subsystem, it offers wide area coverage. The automatic installation wizard simplifies the installation process for even novice users. Featuring a large memory buffer, it can handle simultaneous jobs from multiple users at once. The Internet printing feature let remote users to send text file by FTP or Email to be printed.

- 2 x USB 2.0 + 1 x Parallel Ports
- 802.11g Wireless, 20dBm, client mode.
- UPnP and Installation Wizard
- Remote Internet Printing
- Windows, Netware, Linux, Mac OS, and Unix support
- SNMP, Email notification and Access Control.

WP-201G

Vista *802.11G* *SNMP* *UPnP* *Print Server* *USB 2.0*

1-port Wireless USB Print Server

The WP-201G is a wireless print server with one USB 2.0 port for USB printer sharing. Featuring a powerful 20dBi wireless-G subsystem, it offers wide area coverage. The automatic installation wizard simplifies the installation process for even novice users. Featuring a large memory buffer, it can handle simultaneous jobs from multiple users at once. The Internet printing feature let remote users to send text file by FTP or Email to be printed.

- 1 x USB 2.0 port
- 802.11g Wireless, 20dBm, client mode.
- UPnP and Installation Wizard
- Remote Internet Printing
- Windows, Netware, Linux, Mac OS, and Unix support
- SNMP, Email notification and Access Control.

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AirLive Advance IP Camera Family

In the recent years, the IP Cameras are gaining popularity rapidly because of the ability to integrate them easily into existing networking environment. In addition, users can view video and configure the device from remote. The AirLive IP Camera family is consisting of 7 wireless IP cameras with advance functions.

16-Channel Recording
Using the PC based utility; users can view and record up to 16 IP Cameras simultaneously.

Motion JPEG Compression
The motion JPEG compression provide video only image. Because it has less compression ratio than MPEG4, it is more suitable for providing video evidence.

Viewing from Mobile Phones
You can view the IP camera from mobile phones that support Java applet. For parents with small children or daily farmers, this capability provides them with a peace of mind wherever they go.

MPEG4 Compression
The MPEG4 compression offers much higher compression ratio and make audio recording possible. Our MPEG4 cameras support simultaneous audio/video recording.

WL-5420CAM
MPEG 4 Camera

WL-5400CAM
Wireless Camera

16-Camera Control & Recording Software

WL-5460CAM
Pan-and-Tilt Camera

Moniter Video From Mobile Phone

WL-5460CAM
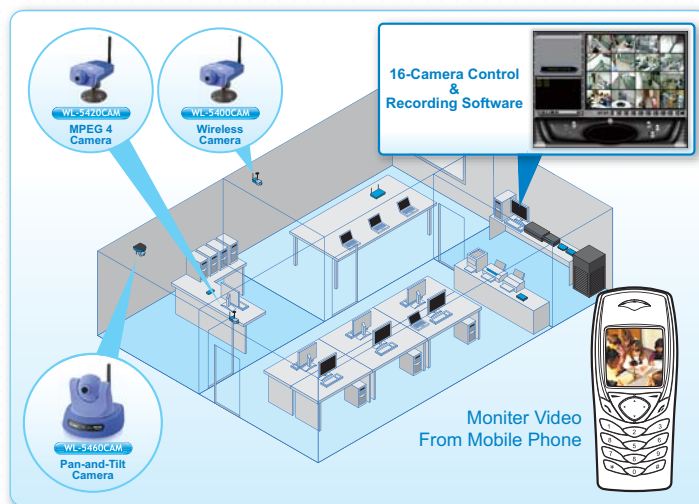
`Pan Tilt` `MPEG4` `802.11G`

Wireless-G Pan-Tilt MPEG4 Camera

The WL-5460CAM is an advanced wireless IP camera with Pan and Tilt function. You can set a particular patrol area; it will then move its lens in both horizontal and vertical direction continuously to scan the area. Or you can remote control the camera to look in the desirable direction. The included IP View utility let you record and monitor up to 16 cameras. The MPEG4 compression let it record both video and audio at the same time.

- 802.11g Wireless
- Pan (340 degree) and Tilt (135 degree)
- Record up to 16 cameras
- 30 FPS at 640 x480, 320x240, and 160x120
- CMOS sensor, 0.5 Lux

- Motion Detection and Auto White Balancing
- MPEG4 compression
- Built-in Microphone
- Desk Mount or Ceiling Mount

WL-5420CAM

`MPEG4` `802.11G`

Wireless-G MPEG4 Camera

The WL-5420CAM is an advanced wireless IP camera with MPEG4 capability. The included IP View utility let you record and monitor up to 16 cameras. The MPEG4 compression let it record both video and audio at the same time.

- 802.11g Wireless
- Record up to 16 cameras
- 30 FPS at 640 x480, 320x240, and 160x120
- CMOS sensor, 0.5 Lux

- Motion Detection and Auto White Balancing
- MPEG4 compression
- Built-in Microphone
- Desk Mount or Ceiling Mount

WL-5400CAM

`Motion JPEG` `JAVA` `802.11G`

Wireless-G Motion JPEG Camera

The WL-5400CAM is an advanced wireless IP camera using Motion JPEG compression. The included IP View utility let you record and monitor up to 16 cameras. You can record video in 640x480, 320x240, or 160x120 resolutions. The utility's video recording software can recycle the recording files once the files exceed the maximum allowed quota. Finally, the video can be viewed from a JAVA equipped GPRS mobile phone.

- 802.11g Wireless
- Record up to 16 cameras
- 10fps@640 x480, 25fps@320x240, and 32fps@162x112
- CMOS sensor, 0.5 Lux

- Motion Detection and Auto White Balancing
- Motion JPEG compression
- Mobile View Java utility
- Desk Mount or Ceiling Mount

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WL-1200CAM `PR`

`3GPP` `DDNS` `UPnP` `Motion Detection` `MPEG4` `W-Fi`

Wireless-G Dual Mode IP Camera

The WL-1200CAM Wireless Internet IP camera is designed for Home or Enterprise customer to enjoy the security and home networking entertainment advantages. It is a very simple to use with plug-n-play installation and wireless operation so you can install the camera anywhere. The web based configuration allows viewing the image from the Internet Live! It also allows you to configure various security function as such video recording to a remote FTP server. The 802.11g now allow the camera to operate at 30FPS speed at 640x480 resolution. It makes the video amazing life like for monitoring or archiving purpose.

- High speed hardware-based image compression
- 802.11g 54Mbps Wireless + WPA2 Security
- Support 640 x 480, 320 x 240 resolution
- Simultaneous Motion JPEG & MPEG-4 Dual Streaming
- Up to 30 fps image resolutions
- UPnP for fast and easy installation
- Bundle surveillance software

WL-1000CAM `PR`

`DDNS` `UPnP` `Motion Detection` `MPEG4` `W-Fi`

Wireless-G Motion JPEG IP Camera

The WL-1000CAM Wireless Internet IP camera is designed for Home or Enterprise customer to enjoy the security and home networking entertainment advantages. It is a very simple to use with plug-n-play installation and wireless operation so you can install the camera anywhere. The web based configuration allows viewing the image from the Internet Live! It also allows you to configure various security function as such video recording to a remote FTP server. It makes the video amazing life like for monitoring or archiving purpose.

- High speed hardware-based image compression
- 802.11g 54Mbps Wireless + WPA2 Security
- Support 640 x 480, 320 x 240 resolution
- Up to 20 fps image resolutions
- UPnP for fast and easy installation
- Bundle surveillance software

WL-2600CAM `PR`

`Pan/Tilt` `Infrared` `2-Way Audio` `3GPP` `RSTP` `UPnP` `Motion Detection` `MPEG4` `W-Fi`

IR Wireless-G Multi-Profile IP Camera

The WL-2600CAM IP Camera is designed for the higher level internet surveillance. It provides infrared LEDs which allow the camera view the object in the dark. The motorized wide-range Pan/Tilt makes it easy to scan the patrol areas. User can also view the video in a 2.5G/3G mobile phone or the real time video software. MPEG4 and Motion-JPEG dual output streaming make it easy to manage your internet bandwidth on both surveillance and video recording.

- Motorized Wide-Range Pan 355 degree and Tilt 135 degree
- Superior Low-light Performance with Automatic Night-mode
- 2.5G / 3G Mobile Phone Live Viewing
- RTSP Live-viewing Supported Two-way audio with Built-in Microphone
- Simultaneous Motion JPEG & MPEG-4 Dual Streaming
- Excellent image quality with up to 30 fps in all resolutions
- UPnP for fast and easy installation
- 16 channels surveillance software

WL-2000CAM `PR`

`Infrared` `2-Way Audio` `3GPP` `RSTP` `UPnP` `Motion Detection` `MPEG4` `W-Fi`

IR Wireless-G Multi-Profile IP Camera

The WL-2000CAM IP Camera is designed for the higher level internet surveillance. It provides infrared LEDs which allow the camera view the object in the dark. User can also view the video in a 2.5G/3G mobile phone or the real time video software. MPEG4 and Motion-JPEG dual output streaming make it easy to manage your internet bandwidth on both surveillance and video recording.

- 802.11g Wireless
- Record up to 16 cameras
- 30 FPS at 640 x 480, 320 x 240, and 160 x 120
- CMOS sensor, 0.5 Lux
- Superior Low-light Performance with Automatic Night-mode
- 2.5G / 3G Mobile Phone Live Viewing
- RTSP Live-viewing Supported Two-way audio with Built-in Microphone

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Watch Digital TV Programs Anywhere

Design for Notebook

Unlike traditionally DVB-T USB dongle that needs an external antenna for reception, the AirTV-1000U comes with a built-in tilting high gain antenna. Therefore, you can just plug into your Notebook's USB port and watch DVB-T digital TV anywhere. You no longer have to deal with the nuisance of where to place the external antenna when you are using a notebook PC. From now, you can watch the DVB-T the way it is intended to: wirelessly and freely from anywhere.
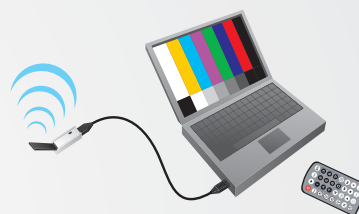
Built-in High Gain Antenna   **USB extention cable included**

135°

135 degree Integrated Tilting Antenna

Although there might other DVB-T USB adapters on the market that uses small screwed-in antenna for portability. Those solutions suffer from poor performance. The AirTV-1000U comes a full-size high gain antenna built into the housing itself. Best of all, it can tilt 135 degree to find the optimum reception angle.

Remote Control and Scheduled Recording

AirTV-1000U comes with a 32-keys remote control so you control all the functions wirelessly. You can change channels, volume, mute, recording, playback functions all at the touch of a button.

The included application software includes the ability to record Digital TV programs at any day and time of the week. This means you won't miss a program. Auto channeling scanning functions, image captured, and many other functions makes your notebook PC more powerful and versatile than any traditionally non-digital VCR and TV.

Buy the AirTV-1000U and enjoy the digital TV broadcast from your home, office, or any locations.*

* Please make sure DVB-T broadcasting program is available in your local regions first before buying the device.

AirTV-1000U

| Integrated Antenna | DVBT | Design For Notebook | VHF/UHF | Schendule Recording | Image Capture |

DVB-T USB2.0 Receiver

The AirTV-1000U turns your PC instantly into a digital TV. With the built-in High Gain antenna that can swivel to any direction. You can watch your favorite DVB-T broadcast on your notebook anywhere. You will be amazed by the resolution and quality of digital broadcast that far exceed the convential analogue TV. In addition, the included utility turns your PC into a TV program recorder also. Just set the time of your favorite programs, then it will record it automatically for you.

- Design for Notebook PC
- Turn your PC into Digital TV
- Full Functioned Remote Control
- Schedule Recording Capability
- Image Capture Capability
- Watch Digital TV Wirelessly Anywhere

* Please check if DVB-T broadcast is available in your region.

Multimedia
Wireless Video Presenter

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Wireless Video Presenter + Video Streaming

The AirVideo-2000 is a Wireless Video Projection Server that attach to the Video projector / beamer VGA port directly. Then you can display the content of your PC on the projection screen wirelessly. The setup is extremely quick that you can make your notebook to work with the AirVideo-2000 without any CD or driver installation. Best of all, the AirVideo-2000 features real time Audio/Video streaming to let you play back video on the projector at smooth 60 frames per second speed. It is perfect for application in hotel conference room, company meeting room, or college classroom.

Do your presentation wirelessly

No more need for long cables. The AirVideo-2000 can connect with any WiFi equipped notebook PC. Display the content of their screen on the projector/beamer.

PC 1

PC 2

AirVideo-2000   Projector
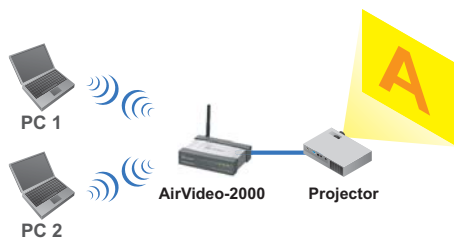
Multimedia Audio/Video Streaming

The AirVideo is not only a PowerPoint presenter. It can display anything from your screen to the video projector. What's more is the built-in Audio/Video streaming hardware that allows the AirVideo to playback any MPEG, MPEG2, MPEG4, DiVX video at 60 frame per second.

Notebook   AirVideo-2000   Projector
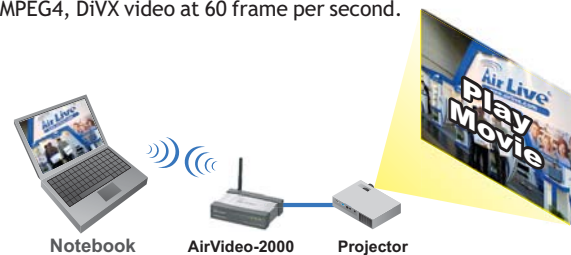
Zero Driver Installation

After the PC is linked to the AirVideo's WiFi system, you can download the utility from AirVideo-2000 directly.. Better yet, administrator can create an auto-run pen drive using the AirVideo-2000's wizard. Just plug in the pen drive into any PC, the PC will be automatically configured and linked to AirVideo-2000.

AirVideo-2000

Download
Utlity

Notebook

AirVideo-2000

Zero Driver
Dongle

Notebook

Changing from One Presenter to Another

The AirVideo can switch from one presenter's PC to another almost instantly. This is perfect for group meeting and classroom environments.

AirVideo-2000   Projector

User 1   User 3   User 4
         User 2

AirVideo-2000   Projector

Change User

User 1   User 3   User 4
         User 2
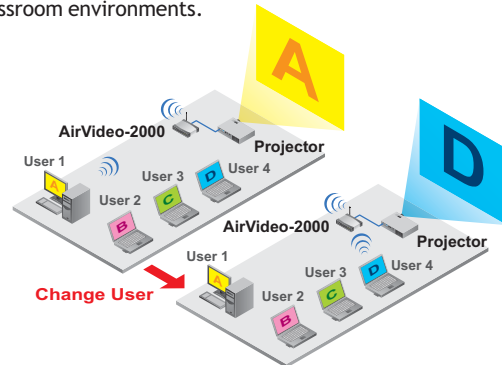
AirVideo-2000

802.11g/b | Video Streaming | MPEG | DiVX | MPEG2 | MPEG4

802.11g Wireless Video Presenter

The AirVideo-2000 is a Wireless-G Video Projection Server that attach to the Video projector (beamer). Then your PCs can display the content of their screen wirelessly on the projector. It not only completely remove the need for cables, but also allow quick change of computers during a presentation or meeting. This is perfect for office or school environment where more than one people make their own presentations from their notebook. In addition, the AirVideo-2000 features video streaming capability so you can play movies from your notebook at 60 frame per second frame rate.

- 802.11g Wireless
- D-SUB VGA connector
- Audio Jack and RJ-45 Ethernet port
- Support WXGA (1280x768), XGA (1024x768),SVGA (800x600) resolutions

- MPEG, MPEG2, MPEG4 playbacks
- Switch Notebooks Instantaneously
- Audio/Video Streaming
- Zero Driver dongle creator

AirLive
Powered by OvisLink Corp.

Bluetooth

The Pioneer of Stereo Sound

Bluetooth®

OvisLink Corp. introduced one of the very first complete Wireless HiFi solution using Bluetooth technology in 2005. It has since changed the world's opinion about wireless audio application. Previously, the Bluetooth audio was thought to be only suitable for hands-free mobile phone earsets. But the AirLive Wireless Stereo Family offers incredible High Fidelity Stereo sound in a wide dynamic range from 20 Hz to 22kHz. This means wireless audio can finally deliver the strong bass and crystal clear audio that previously only possible with traditional wired equipment. More over, the AirLive Wireless Stereo family also offers the widest accessory options for connection with any audio source, PC, or iPod players.

AirLive Bluetooth Stereo Family

HiFi	AVRCP	Zero Driver	Auto Pairing	A2DP
Hi Fidelity audio that has dynamic range from 20Hz all the way up to 22KHz, covering the entire audible spectrum for human hearing.	Audio Video Remote Control Protocol. This feature enables the Bluetooth Headset and Receiver to control the volume and sound selection on the PC or mobile phones.	No driver installation required	Turn on both Bluetooth devices for 90 seconds, and they will automatically paired between themselves.	The Advanced Audio Distribution Profile specifies the protocols and procedures that define the distribution of high quality audio content

Receiver

BT-120HP **A**

HiFi-Stereo/Skype

MIC

BT-120AR **B**

Your Own Headset

MIC
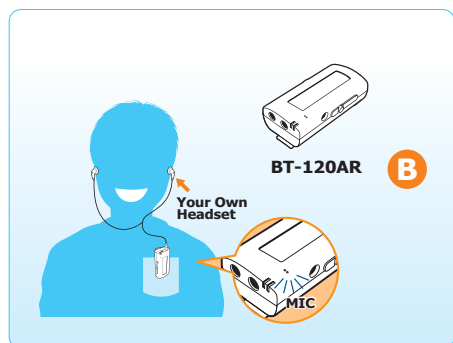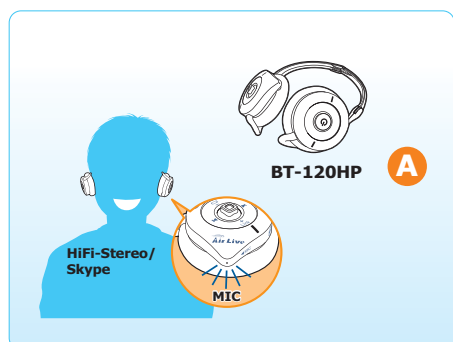
Transmitter

Listen to PC's Audio

C BT-120AD

PC

Audio Only Zero Driver

Listen to PC's Audio + talk VoIP

D BT-201USB

PC

2-Way Audio

Listen to Audio Source

E BT-120AJ

Stereo Equipment
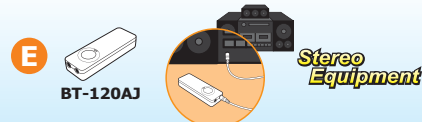
Listen to iPod

F BT-120IP

iPod

Listen to Mobile Phone

G Bluetooth Mobile Phone

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

Bluetooth Product Guide

	BT-120AD C	BT-201USB D	BT-120AJ E	BT-120IP F	Mobile Phone G
BT-120HP A	Listen to PC music	Listen to PC music and Talk on Skype	Listen to Audio Equipment	Listen to iPod music	Hands-free talk and music listening
BT-120AR B	Listen to PC music	Listen to PC music and Talk on Skype	Listen to Audio Equipment	Listen to iPod music	Hands-free talk and music listening

BT-120HP

`HiFi` `AVRCP` `A2DP` `Auto Pairing` `Zero Driver` `Lithium Polymer` `Bluetooth Receiver`

Bluetooth Stereo 2-Way Headset

The BT-120HP stereo headset is a stylish sports-type Headset with built-in microphone. The headset can fold into smaller footprint for easy transportation. It can work with mobile phones that support A2DP profile. With optional necessary, it can also connect with computer and any audio equipment. The headset's AVRCP support lets user control PC's media player's volume and sound selections through the headset's 5-direction joystick.

- HiFi Stereo Headset, Built-in Microphone
- Work with Mobile Phones
- Built-in Microphone, work with Skype
- 5-Point Joystick Control, Mute button
- Connect to iPod, PC, or Audio source with optional accessories
- Rechargeable Lithium Polymer Battery- 8 Hours Usage.

BT-120AR

`HiFi` `AVRCP` `A2DP` `Auto Pairing` `Zero Driver` `Lithium Polymer` `Bluetooth Receiver`

Bluetooth Stereo 2-Way Audio Receiver

The BT-120AR is an audio receiver that you can wear and use your own favorite earphone to listen music wirelessly. The audio receiver has a built-in microphone to work with your mobile phone or PC's Skype application. With 1 headphone output and 1 line output, it is possible to use it as the wireless audio bridge when pairing with BT-120AJ. With optional necessary, it can also connect with computer and any audio equipment. The headset's AVRCP support lets user control PC's media player's volume and sound selections through the unit's control buttons.

- HiFi Stereo Receiver, Built-in Microphone
- 1 x Headphone out + 1 x Line Out ports
- Work with Mobile Phones
- Volume Control, Play/Pause, and Mute buttons
- Connect to iPod, PC, or Audio source with optional accessories
- Rechargeable Lithium Polymer Battery- 8 Hours Usage.

BT-120AJ

`HiFi` `AVRCP` `A2DP` `Auto Pairing` `Zero Driver` `Lithium Polymer` `Bluetooth Receiver`

Bluetooth Stereo 2-Way Audio Transmitter

The BT-120AJ is an audio transmitter with line input, so you can connect it to any audio source's headphone-out port. Instantly, you can transmit any audio signal to wireless Headset or receiver for music listening. When using with AirLive BT-120HP or BT-120AR, the device will perform auto pairing.

- HiFi Stereo Transmitter
- 1 x Line Input, connect with any audio source
- Zero Driver Installation
- Connect with any audio source or headphone output
- Auto Pair with AirLive Bluetooth Stereo Family
- Rechargeable Lithium Polymer Battery- 8 Hours Usage.

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

BT-120IP

| HiFi | A2DP | Auto Pairing | Zero Driver | Bluetooth Receiver |

Bluetooth Stereo 2-Way Audio Transmitter

The BT-120IP is an audio transmitter designed specifically for iPod. You can plug in the iPod directly and enjoy wireless music listening instantly. With the Hi-Fidelity capability, the BT-120IP can faithfully reproduce the high quality sound of your MP3 player.

- HiFi Stereo Transmitter
- Plug into iPod's Headphone jack
- Zero Driver Installation
- Auto Pair with AirLive Bluetooth Stereo Family
- Replaceable AAA Batteries x 2

BT-120AD

| HiFi | AVRCP | A2DP | Auto Pairing | Zero Driver | Bluetooth Transmitter |

Bluetooth Audio Dongle

The BT-120AD is a wireless Audio USB dongle for your Notebook or Desktop PC. When it is plugged into your PC, the audio output will change from your soundcard to the Bluetooth audio. There is no need to install driver because Windows operating system come with driver for it. When pair with our BT-120AR or BT-120HP, you can listen to your PC audio wirelessly!

- Listen to your PC audio wirelessly
- USB 1.1
- Zero Driver Installation
- Auto Pairing with BT-120HP or BT-120AR
- AVRCP support for headset controls

Bluetooth Data/Audio Dongle

BT-201USB/BT-202USB

| EDR | Broadcom | Widcomm |

Bluetooth 2.0 USB Adapter

The BT-201USB/BT-202USB instantly turns your Notebook and PC into a Bluetooth capable device. That means you can connect your computer to mobile phones, PDA, notebooks, printers, Bluetooth Headset or another PC. It can achieve the extra performance boost using the EDR (Enhanced Data Rate) technology while maintaining compatible with older Bluetooth 1.1 and 1.2 products.
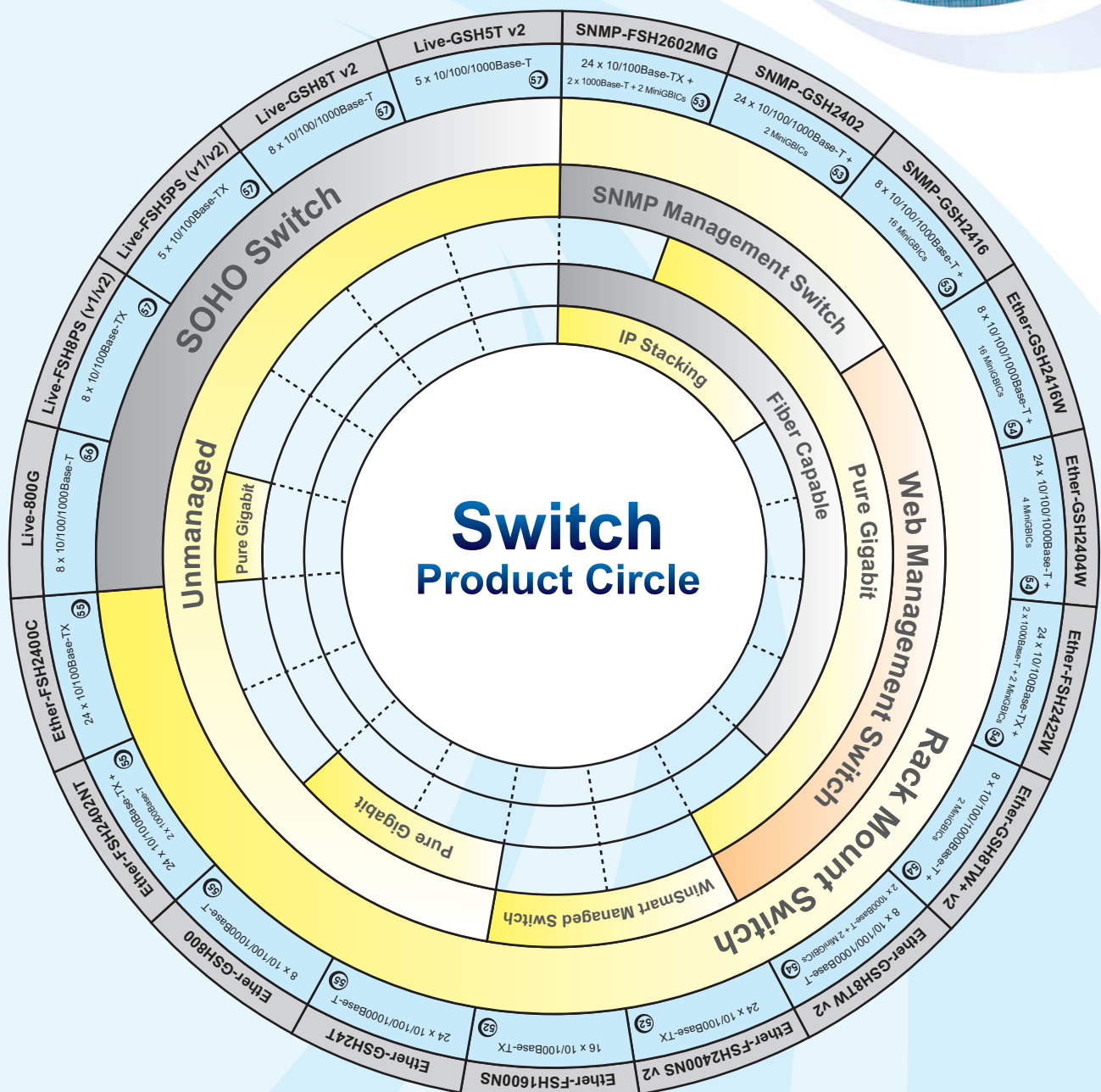
- **BT-201USB:** Class 1 for up to 100meter distance
- **BT-202USB:** Class 2 for over 10meter distance
- Bluetooth 2.0 USB Adapter
- EDR mode: 3 Times the speed of Bluetooth 1.2
- Broadcom Chipset, Widcomm Utility
- USB 1.1 spec

| Bluetooth Standards		
	Bluetooth 1.1/1.2	**Bluetooth 2.0**
Throughput	1Mbps	3Mbps
Data Rate	721Kbps	2.1Mbps

Ethernet Products

*O*visLink Corp. is one of the earliest manufacturers of Ethernet switches and adapters. For over a decade, our Ethernet products are known for their high quality and reliability in the industry. Some of our switches have been running in the most adverse environments for over 10 years. Today, our professional Ethernet products is one of the most diverse in the industry covering SNMP Management switches, Web Management switches, Fiber switches, our unique WinSmart switches, Ethernet Adapters, and Fiber Media Converters. Moreover, our Live series are full range SOHO switches in beautiful stylish housing.

Switch Product Circle

SOHO Switch
- Live-GSH5T v2 — 5 x 10/100/1000Base-T — 57
- Live-GSH8T v2 — 8 x 10/100/1000Base-T — 57
- Live-FSH5PS (v1/v2) — 5 x 10/100Base-TX — 57
- Live-FSH8PS (v1/v2) — 8 x 10/100Base-TX — 57
- Live-800G — 8 x 10/100/1000Base-T — 56

SNMP Management Switch
- SNMP-FSH2602MG — 24 x 10/100Base-TX + 2 x 1000Base-T + 2 MiniGBICs — 53
- SNMP-GSH2402 — 24 x 10/100/1000Base-T + 2 MiniGBICs — 53
- SNMP-GSH2416 — 8 x 10/100/1000Base-T + 16 MiniGBICs — 53

Web Management Switch
- Ether-GSH2416W — 8 x 10/100/1000Base-T + 16 MiniGBICs — 54
- Ether-GSH2404W — 24 x 10/100/1000Base-T + 4 MiniGBICs — 54
- Ether-FSH2422W — 24 x 10/100Base-T + 2 x 1000Base-T + 2 MiniGBICs — 54

Rack Mount Switch
- Ether-GSH8TW v2 — 8 x 10/100/1000Base-T + 2 MiniGBICs — 52
- Ether-GSH8TW V2 — 2 x 1000Base-T + 2 MiniGBICs — 52
- Ether-FSH2400NS v2 — 24 x 10/100Base-TX — 52
- Ether-FSH1600NS — 16 x 10/100Base-TX — 52
- Ether-GSH24T — 24 x 10/100/1000Base-T — 52
- Ether-GSH800 — 8 x 10/100/1000Base-T — 55
- Ether-FSH2402NT — 24 x 10/100Base-TX + 2 x 1000Base-T — 55
- Ether-FSH2400C — 24 x 10/100Base-TX — 55

Unmanaged — Pure Gigabit

IP Stacking | Fiber Capable | Pure Gigabit | WinSmart Managed Switch

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

Rate Control

The Rate Control function gives switches the ability to control upstream and downstream speed separately for each port. Therefore, it is most useful when the switch is installed in an apartment building that shares the Internet Connection. Each household can be limited to different upstream and downstream bandwidth. The Ethernet switch uses flow control to limit traffic, it is recommended to set the port to 10Mbps half duplex mode in order to force client's flow control on.

Router

Internet

Upstream 64K | Downstream 512K | Upstream 512K | Downstream 1024K

PC1   PC2
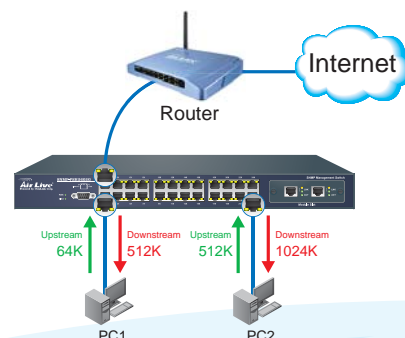
Switch with Rate Control

SNMP-FSH2602MG..... 53   Ether-FSH2422W...... 54
SNMP-GSH2416........ 53   Ether-GSH8TW+ v2..... 54
SNMP-GSH2402........ 53   Ether-GSH8TW v2..... 54
Ether-GSH2404W...... 54

IP Stacking

AirLive's SNMP switches have IP Stacking capability. It allows the administrator to use the web browser to manage multiple switches at once. When administrator get into the web interface of the master switch, the management function will automatically find all compatible switches in the network and manage them as if they are the local switches.

Master Switch

Web UI

Switch 2
Switch 3
Switch 4

Switch with IP Stacking

SNMP-GSH2416........ 53
SNMP-GSH2402........ 53
SNMP-FSH2602MG..... 53

802.1x

802.1x is a security standard used by ISP and hotspot provider to authenticate an user. In 802.1x setup, an authenticator is needed to hold and check whether an user(called radius supplicant) have access right to the network service. In a wireless network, this typically requires the Access Point to have 802.1x authenticator function. However, AirLive's SNMP switches are all equipped with radius authenticator function for each port. Therefore, you can attach any non-802.1x equipped AP to the switch and still have the 802.1x authenticator function.

Radius Authenticator

1   11   23

Check for Authorization

Radius Supplicant
PC
Radius Server
Internet
Grant or Reject Access
Request Access to Internet
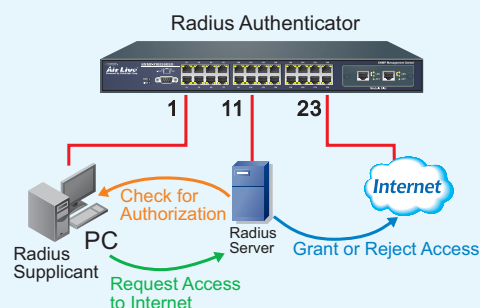
Switch with 802.1x Radius

SNMP-GSH2416........ 53
SNMP-GSH2402....... 53
SNMP-FSH2602MG..... 53
Ether-GSH2404W..... 54

OvisLink Corp. can provide you step-by-step guide on how to setup Windows radius server. Join the AirLive distribution network and enjoy our network knowledge base.

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

Tag VLAN

802.1Q Tag VLAN

Virtual LAN. VLAN is used to divide a network into smaller networks to reduce the traffic and for security purpose. There are 2 types of VLAN specifications for Ethernet network

- **Port Based VLAN**

  Define VLAN based on port number of the switch. Port based VLAN is easy to configure but often limited to one single switch

- **802.1Q Tag VLAN**

  In 802.1Q VLAN, the VLAN information is written into the Ethernet packet itself. Each packet carries a VLAN ID (called Tag) as it traveled across the network. Therefore, the VLAN configuration can be configured across multiple switches.

Tag VLAN format

In 802.1Q VLAN, four bytes have been added to the Ethernet frame. In these 4 bytes, 12 bits are used for VLAN ID. There can be possible of 4096 VLAN ID, although most switches see a 256 VLAN-windows at a time.

Source MAC address	VPID	TCI			Length
		TCI			
6 Bytes	2 Bytes	Priority	CFI	VLAN ID	2 Bytes
		3 bits	1 bits	12 bits	

VID

VID defines the member ports of a group. A packet can only travel inside a member port when the member port is part of the VID group. Take for example, when a packet's VLAN ID is 100, it can travel to Port 3 only if the port 3 is a member port of VLAN 100.

Tagged or Untagged

An Ethernet packet that has VLAN ID information already written is called Tag packet. Conversely, an Ethernet packet that has no VLAN ID is called untagged packet. All packets begin as an untagged packet unless being written by an adapter or switch.

Untagged Packet → **?** Packet **No VID**

PVID

For an Ethernet packet to have a VLAN ID, the Tag must be written by an Ethernet adapter or Switch. A switch's function to write a VLAN ID into a packet is called PVID (Port VID). When a port VID is defined, a packet without VLAN ID (called Untagged packet) enter the port, the switch will write VLAN ID (VID) into the packet according to the PVID definition.

? Untag
PVID=100
VID 100
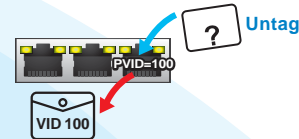
Ingress Filtering

Ingress Filtering is the controlling rule for Untagged packet when entering the switch's port. For example, the filtering rule can be defined to dropped untagged packet or to forced writing PVID to Tagged packet. Ingress filtering is important to prevent the VLAN security being tempered by users.

? Untag
Ingress Filtering
Drop or Write VID?
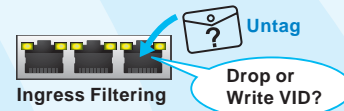
Example *

In this example, the 3 switches are connected together and 2 VLAN groups are defined across 3 switches. To make network in the same VID group seeing each other but different VID group invisible to each other. The step to configure is as followed:

Switch A
VID 100   VID 200
1 2 3 4 5 6

Switch A
PVID Settings
Port 2 and 3   100
Port 4 and 5   200
Port 1 and 6   150
Ingress Filtering
Port 2, 3, 4, 5   Force Writing Tag**
Port 1, 6   Write PVID to untagged packet only
VID
Group 100   member ports {2,3,1,6}
Group 200   member ports {4,5,1,6}
Group 150   member ports {1,2,3,4,5,6}

Switch B
VID 100   VID 200

Switch C
VID 200   VID 100

Switch B
PVID Settings
Port 1 and 2   100
Port 3 and 4   200
Port 5   150
Ingress Filtering
Port 1, 2, 3, 4   Force Writing Tag**
Port 5   Write PVID to untagged packet only
VID
Group 100   member ports {1,2,5}
Group 200   member ports {3,4,5}
Group 150   member ports {1,2,3,4,5}

Switch C
PVID Settings
Port 2 and 3   200
Port 4 and 5   100
Port 1   150
Ingress Filtering
Port 2, 3, 4, 5   Force Writing Tag**
Port 1   Write PVID to untagged packet only
VID
Group 100   member ports {4,5,1}
Group 200   member ports {2,3,1}
Group 150   member ports {1,2,3,4,5}

Switch with Tag VLAN

SNMP-GSH2416........ 53
SNMP-GSH2402........ 53
SNMP-FSH2602MG..... 53
Ether-GSH2416W...... 54
Ether-GSH2404W...... 54
Ether-FSH2422W...... 54
Ether-GSH8TW+ v2..... 54
Ether-GSH8TW v2..... 54

* The technical term and configuration method might varies between different switch models. Contact our tech support for configuration details.
** Write Untag packet, Drop Tag packet whose VID value is different from PVID

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Specification Table

		SOHO Switches							
Model	**Housing**	**10/100 Base-TX**	**10/100/1000 Base-T**	**Memory Buffer**	**Mac Address Table**	**Power**	**LED**	**Extra Feature**	**Page Number**
Live Gigabit Switches									
Live-800G	Plastic		8	1.25Mb	4K	External	1 Row	Ultra Compact	56
Live-GSH8T v2	Plastic		8	1.25Mb	8K	External	3 Row	Ultra Compact	57
Live-GSH5T v2	Plastic		5	1.25Mb	8K	External	3 Row	Ultra Compact	57
Live Fast Ethernet Switches									
Live-FSH8PS v2	Plastic	8		512K	1K	External	1 Row	Ultra Compact	57
Live-FSH5PS v2	Plastic	5		512K	2K	External	1 Row	Ultra Compact	57
Live-FSH8PS	Plastic	8		768K	1K	External	1 Row	Ultra Compact	57
Live-FSH5PS	Plastic	5		768K	1K	External	1 Row	Ultra Compact	57

Professional Rack Mount Switches

Model No.	Page Number	Pre-Announced Product	Ethernet Port — 10/100Base-TX	10/100/1000Base-T	Mini-GBIC	1000Base-SX	1000Base-LX	HW — Auto MDI/MDI-X	19" Rack Mountable	Memory Buffer	MAC Address Table	Internal Power Supply	Switch Engine Throughput	Mgmt — SNMP	WEB	WinSmart	Telnet	Console	Multi-Switch Managing	IP Stacking	Backup and Restore	802.1Q Tag VLAN	Ingress Filtering	Port Base VLAN	Rapid STP (802.1w)	LACP (802.3ad)	IEEE 802.1p Queues	L2-L4 QoS	RMON	Traffic Statistic	Port Mirror	IGMP Snooping	802.1x Radius Auth.	RATE Control
SNMP Management Switch																																		
SNMP-GSH2416	53			8	16	□	□	●	●	3.1Mb	8K	●	48Gbps	●	●																			
SNMP-GSH2402	53			24	2	□	□	●	●	3.1Mb	8K	●	48Gbps	●	●																			
SNMP-FSH2602MG	53		24	2	2	□	□	●	●	4Mb	14K	●	9.6Gbps	●	●																			
Web Management Switch																																		
Ether-GSH2416W	54			8	16	□	□	●	●	4Mb	14K	●	48Gbps		●																			
Ether-GSH2404W	54			24	2	□	□	●	●	3.1Mb	8K	●	48Gbps		●																			
Ether-FSH2422W	54		24	2	2	□	□	●	●	4Mb	8K	●	8.8Gbps		●																			
Ether-GSH8TW v2	54			8				●	●	1.1Mb	8K	●	16Gbps		●																			
Ether-GSH8TW+ v2	54	●		8	2	□	□	●	●	1.1Mb	8K	●	16Gbps		●																			
WinSmart Managed Switch																																		
Ether-FSH2400NS v2	52	●	24					●	●	2.5Mb	8K	●	4.8Gbps			●																		
Ether-FSH1600NS	52	●	16					●	●	1Mb	2K	●	3.2Gbps			●																		
Unmanaged Switch																																		
Ether-GSH24T	55			24				●	●	3.1Mb	8K	●	48Gbps																					
Ether-GSH800	55			8				●	●	1.25Mb	4K	●	16Gbps																					
Ether-FSH2402NT	55		24	2				●	●	2.5Mb	8K	●	8.8Gbps																					
Ether-FSH2400C	55		24					●	●	1.5Mb	8K	●	4.8Gbps																					

● Yes   □ Optional Transceiver   ▲ Optional Module   ○ Read Only

* For explanation of network terms. Please refer to the Network Glossary section of this catalogue.

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

SNMP-GSH2416

| Mini GBIC | Jumbo Frame | Pure Giga | SNMP | Fiber | WEB | IP Stacking | 802.1x | Tag VLAN | Internal Power | Rack Mount |

8+16 Pure Gigabit SNMP Managed Switch

The SNMP-GSH2416 is an advanced SNMP Gigabit switch with 8 Gigabit Copper and 16 MiniGBIC slots. It features advance software functions such as IP Stacking, SNMP, RMON, Rapid Spanning Tree, 802.1x radius Authenticator and much more.

- 8 x 1000Base-T ports + 16 MiniGBIC Slots
- Optional 1000Base-SX/LX SFP Transceiver
- IP Stacking: 16 Switches
- SNMP, Web, Telnet Management
- RMON Group 1-2-3-9, 802.1w Rapid STP
- 802.1Q Tag VLAN with GVRP/GARP
- 802.3ad LACP, 802.1d STP, 802.1p
- Layer 4 TCP/UDP Port and ToS Classification

Optional Accessories:

MGB-1000SX	1000Base-SX MiniGBIC Transceiver
MGB-1000LX	1000Base-LX MiniGBIC Transceiver

SNMP-GSH2402

| Mini GBIC | Jumbo Frame | Pure Giga | SNMP | Fiber | WEB | IP Stacking | 802.1x | Tag VLAN | Internal Power | Rack Mount |

24+2 Pure Gigabit SNMP Managed Switch

The SNMP-GSH2402 is an advanced SNMP Gigabit switch with 24 Gigabit Copper and 2 MiniGBIC slots. The MiniGBIC slots can take standard Fiber Gigabit Transceiver in SFP type. It features advance software functions such as IP Stacking, SNMP, RMON, Rapid Spanning Tree, 802.1x radius Authenticator and much more.

- 24 x 1000Base-T ports + 2 MiniGBIC Slots
- Optional 1000Base-SX/LX SFP Transceiver
- IP Stacking: 16 Switches
- SNMP, Web, Telnet Management
- RMON Group 1-2-3-9, 802.1w Rapid STP
- 802.1Q Tag VLAN with GVRP/GARP
- 802.3ad LACP, 802.1d STP, 802.1p
- Layer 4 TCP/UDP Port and ToS Classification

Optional Accessories:

MGB-1000SX	1000Base-SX MiniGBIC Transceiver
MGB-1000LX	1000Base-LX MiniGBIC Transceiver

SNMP-FSH2602MG

| Mini GBIC | SNMP | Fiber | WEB | IP Stacking | 802.1x | Rate Control | Tag VLAN | Internal Power | Rack Mount |

24+2 Mixed Gigabit SNMP Managed Switch

The SNMP-FSH2602MG is an advanced SNMP Mixed Fast Ethernet + Gigabit switch. The unique Per-port Bandwidth control allow administrator to limit the outbound and inbound speed separately for each port. It features software functions such as IP Stacking, SNMP, RMON, Rapid Spanning Tree, 802.1x radius Authenticator and much more.

- 24 x 10/100Mbps + 2 x 1000Base-T + 2 MiniGBIC Slots
- Single IP management through Web UI.
- SNMP, Web, Console, and Telnet Management
- RMON Group 1-2-3-9, 802.1w Rapid STP
- 802.1Q Tag VLAN, 802.3ad LACP, 802.1d STP
- Per-port Bandwidth control in 100K increment.

Optional Accessories:

MGB-SX	1000Base-SX MiniGBIC Transceiver
MGB-LX-10	1000Base-LX MiniGBIC Transceiver, 10km

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Wireless Outdoor

Broadband

Multimedia

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Security Products

Powerline

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Ether-GSH2416W

| Jumbo Frame | Pure Giga | Fiber | WEB | Rate Control | Tag VLAN | Internal Power | Rack Mount |

8+16 Pure Gigabit Web Managed Switch

The Ether-GSH2416W is an advanced Web Managed Gigabit switch with 8 Gigabit Copper and 16 MiniGBIC slots. When all MiniGBIC slots are installed with fiber transceivers, the switch has 16 Gigabit Fiber ports + 8 x 10/100/1000Mbps ports. It features advance software functions such as Rate Control, Tag VLAN, LACP Trunking, and static MAC address lock.

- 8 x 1000Base-T ports + 16 MiniGBIC Slots
- Optional 1000Base-SX/LX SFP Transceiver
- Web and Console Management
- 802.1Q Tag VLAN and 802.1p Priority
- Per-port Bandwidth(Rate) Control, Port Statistic
- Port Mirroring, Jumbo Frame Support

Optional Accessories:

| MGB-SX | 1000Base-SX MiniGBIC Transceiver |
| MGB-LX-10 | 1000Base-LX MiniGBIC Transceiver, 10km |

Ether-GSH2404W

| Mini GBIC | Jumbo Frame | Pure Giga | Fiber | WEB | 802.1x | Tag VLAN | Rate Control | Internal Power | Rack Mount |

24+2 Pure Gigabit Web Managed Switch

The Ether-GSH2402W is an advanced Gigabit WEeb Managed switch with 24 Gigabit Copper and 4 MiniGBIC slots. The Ether-GSH2404W port 21-24 (4 x 1000T and 4 x Mini-GBIC) are sharing ports. It means when a port's MINIGBIC slot is used, the associated Gigabit Copper port can not be used. This is a perfect solution for mid-large enterprise, campus, internet cafe and FTTH solution. It features advance software functions such as Rate Control, Tag VLAN, LACP Trunking and Jumbo Frame,

- 24 x 10/100/1000Mbps RJ-45 + 4 x Mini-GBIC Gigabit Ethernet ports
- Optional 1000Base-SX/LX SFP Transceiver
- Web Management and firmware upgrade
- 802.1Q Tag VLAN and 802.1p Priority
- Per-port Bandwidth (Rate) Control, Tag VLAN
- Port Mirroring, Jumbo Frame Support
- 48G throughput

Optional Accessories:

| MGB-SX | 1000Base-SX MiniGBIC Transceiver |
| MGB-LX-10 | 1000Base-LX MiniGBIC Transceiver, 10km |

Ether-GSH8TW v2 / 8TW+v2

| Jumbo Frame | Pure Giga | Fiber | WEB | Tag VLAN | Internal Power | Rack Mount |

8 / 8+2 Pure Gigabit SNMP Managed Switch

The Ether-GSH8TW is an advanced Web Managed Gigabit switches with 8 Gigabit Copper ports. The Ether-GSH8TW+ adds 2 MiniGBIC slots for Gigabit Fiber transceivers. The IGMP advance software functions such as Rate Control, Tag VLAN, LACP Trunking, and static MAC address lock are included.

- **Ether-GSH8TW v2:** 8 x 1000Base-T ports
- **Ether-GSH8TW+ v2:** 8 x 1000Base-T ports + 2 x MiniGBIC Ports
- 1 x 10/100Mbps Management Port
- Web Management
- 802.1Q Tag VLAN and 802.1p Priority
- Rate Control (Ether-GSH8TW only)
- Port Mirroring, Jumbo Frame Support
- Port Statistic

Optional Accessories:

| MGB-SX | 1000Base-SX MiniGBIC Transceiver |
| MGB-LX-10 | 1000Base-LX MiniGBIC Transceiver, 10km |

Ether-FSH2422W

| Mini GBIC | Fiber | WEB | Tag VLAN | Rate Control | Internal Power | Rack Mount |

24+2G Mixed Gigabit Web Managed Switch

The Ether-FSH2422W is a 24 port Mixed Gigabit Web Managed switch. The Ether-FSH2422W port 25-26 (2 x 1000T and 2 x Mini-GBIC) are sharing ports. It means when a port's MINIGBIC slot is used, the associated Gigabit Copper port can not be used. This is an ideal solution for growing business networks, classrooms and workgroups which benefit from superior performance and keep up with expanding network needs. It features advance software functions such as port trunks, QoS, Rate control, Port base VLAN, and broadcast storm filter

- 24 x 10/100Mbps + 2-port 10/100/1000Base-T and 2-port SFP slots (combo) for optional fiber connect
- Optional 1000Base-SX/LX SFP Transceiver
- Web Management and firmware upgrade
- 802.1Q Tag VLAN and 802.1p Priority
- Per-port Bandwidth (Rate) Control, Tag VLAN
- Port Mirroring, tunnking and Broadcast filter
- 8.8G throughput

Optional Accessories:

| MGB-SX | 1000Base-SX MiniGBIC Transceiver |
| MGB-LX-10 | 1000Base-LX MiniGBIC Transceiver, 10km |

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Ether-FSH2402NT

Rack Mount · Internal Power · Gigabit

24+2G Mixed Gigabit Switch

The Ether-FSH2402NT is a 24-port mixed Gigabit switch designed to be the center of your office network. With 24 x 10/100Mbps ports and 2 Gigabit ports, you can put the servers on the Gigabit port while putting the PCs on the 10/100Mbps ports. It came in a rack mountable metal housing

- 24 x10/100Base-TX ports
- 2 x 10/100/1000Base-T ports
- 19" Rack Mountable
- Internal Power Supply
- Large 8K MAC address Table
- 8.8GBps backbone speed

Ether-FSH2400C

Rack Mount · Internal Power

24-port Fast Ethernet Switch

The Ether-FSH2400C 24-port 10/100Base-TX Switch is a multi-port Switch that can be used to build high-performance switched workgroup networks. This switch is a store-and-forward device that offers low latency for high-speed networking. The Switch is targeted at workgroup, department or backbone computing environment at SME (small, medium enterprise) business.

- 24 x10/100Base-TX ports
- 19" Rack Mountable
- 10.5" Compact Housing
- Internal Power Supply
- Large 8K MAC address Table
- 4.8GBps backbone speed

Ether-GSH24T

Pure Giga · Rack Mount · Internal Power

24-port Pure Gigabit Switch

The Ether-GSH24T is a pure Gigabit 19" rack mountable switch with 24 x 1000Base-T ports. The 1000Base-T port can use standard Cat.5E cable to transfer data at 1000Mbps speed. The 1000Base-T ports are also compatible with 10/100Mbps connections. The switch features a very fast switching engine capable of processing 48GBps of data. This means wired speed transfer for your data traffic.

- 24 x 1000Base-T Gigabit Ethernet ports
- RJ-45 Connectors
- 19" Rack Mountable
- Internal Power Supply
- 48GBps Switching Engine
- 3.2Mb Buffer memory, 8K MAC address table.

Ether-GSH800

Pure Giga · Rack Mount · Internal Power

8port Pure Gigabit Switch

The Ether-GSH800 is a pure Gigabit 9-inch compact in size with 8 gigabit ports and metal housing with internal power supply making it idea for user with limited space. The Ether-GSH800 has high-performance switched engine support store-and-forward architecture. The Switch is targeted at workgroup, department or backbone computing environment at SME (small, medium enterprise) business

- 8 x 10/100/1000Mbps ports
- 9" mental housing
- 16GBps Backbone Speed
- Internal Power and Rack Mount kits include

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![AirLive logo - Powered by OvisLink Corp.]

Live Series

*T*he Live Series is a family of elegantly designed Ethernet switches that can fit into the decor of your home and office. Underlying the glossy shining case is a high performance switching engine with fast and reliable performance for your home or office need.   Some models have metal lower housing to provide the best combination of performance and cooling capacity.

- **Award Winning Housing Design**
- **Comprehensive LEDs**
- **Stackable Housing**
- **External Power Supply**

Live-800G

Pure Giga | Auto Sensing | Full Duplex | Plug & Play | Auto MDI/MDI-X

8-port SOHO Pure Gigabit Switch
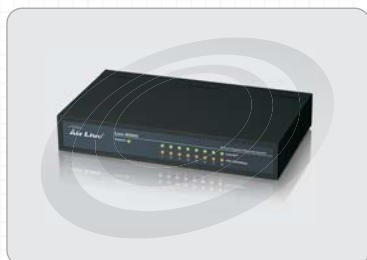
With the advent of the Live-800G Pure Gigabit switch, the foundation to build a high performance and affordable all Gigabit network for your home and office is realized. Equipped with 8 copper based Gigabit ports and a high performance switching engine, the switch connects your computers and network device at the sensational 1000Mbps speed

- 8 x 10/100/1000Mbps Gigabit ports
- Metal housing
- 16GBps Backbone Speed
- RJ-45 connectors

Network File Transfer Performance		
	100Mbps	Gigabit
10 Gigabyte file transfer	14 minutes*	80 seconds*

* Performance measured using Netcom's Smartbit 2000.
  Actual figure varies with CPU speed, Disk subsystem, Operatiing System, and Network loading. The number should be taken for its relative values.

Video Bandwidth Requirement **		
	VCD	DVD
Resolution(PAL)	352x288	720x576
Bandwidth(Mbps) at 32bit, 25FPS	81Mbps	332Mbp

** Uncompressed video

Live-800G

1000Mbps

1000Mbps   1000Mbps

PC   PC   Video Server
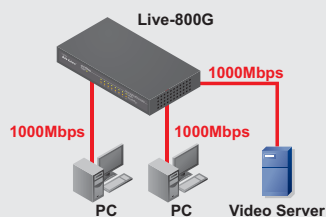
Live-FSH5PS v2 / Live-FSH8PS v2

Auto Sensing | Full Duplex | Plug & Play | Wired Speed

5/8 ports 10/100Mbps Fast Ethernet Switch

The Live-FSH5PS v2 and Live-FSH8PS v2 are fast Ethernet switches enclosed in mini stylish housing. Each port is auto MDI-MDIX to eliminate the need for cross over. The switch will auto sense the 10/100Mbps connection.

- **Live-FSH5PS v2:** 5 x 10/100Mbps, Auto sensing
- **Live-FSH8PS v2:** 8 x 10/100Mbps, Auto sensing
- Stylish housing with polished shining surface
- Wired Speed switching
- LED indicator for speed and link status

Live-FSH5PS / Live-FSH8PS

Auto Sensing | Full Duplex | Plug & Play | Wired Speed

5/8 ports 10/100Mbps Fast Ethernet Switch

The Live-FSH5PS and Live-FSH8PS are fast Ethernet switches enclosed in ultra mini stylish housing. Each port is auto MDI-MDIX to eliminate the need for cross over. The switch will auto sense the 10/100Mbps connection.

- **Live-FSH5PS:** 5 x 10/100Mbps, Auto sensing
- **Live-FSH8PS:** 8 x 10/100Mbps, Auto sensing
- LED indicator for speed and link status
- Wired Speed switching
- Ultra Compact Housing

Live-GSH5T v2

Pure Giga | Auto Sensing | Full Duplex | Plug & Play | Auto MDI/MDI-X

5-port 10/100/1000BASE-T Gigabit Switch

The Live-GSH5T v2 is a high performance 5 copper based Gigabit ports and a high performance switching engine for your home and office. The Live-GSH5T connects your computers and network device at the sensational 1000Mbps speed. Sharing files and multi-media device over network is just as fast as using your own PC. Best of all, it uses the same Cat.5 cable and is compatible with all the 10/100Mbps devices.

- 5 x 10/100/1000Mbps Gigabit ports, Auto sensing
- Stackable plastic housing
- Metal back panel for better heat dissipation
- 10GBps Backbone Speed
- Non-blocking wire-speed

Live-GSH8T v2

Pure Giga | Auto Sensing | Full Duplex | Plug & Play | Auto MDI/MDI-X

8-port 10/100/1000BASE-T Gigabit Switch

The Live-GSH8T v2 is a high performance 8 copper based Gigabit ports and a high performance switching engine for your home and office. The Live-GSH8T connects your computers and network device at the sensational 1000Mbps speed. Sharing files and multi-media device over network is just as fast as using your own PC. Best of all, it uses the same Cat.5 cable and is compatible with all the 10/100Mbps devices.

- 8 x 10/100/1000Mbps Gigabit ports, Auto sensing
- Stackable plastic housing
- Metal back panel for better heat dissipation
- 16GBps Backbone Speed
- Non-blocking wire-speed

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Linking your PC to the Network World

OvisLink Corp. began as an Ethernet network adapter manufacturer more than one decade ago. From the era of coaxial cable to this day of Gigabit fiber, we have always provided solutions to put different computer platform on the network. Whether it is for your desktop PC or notebook, we have a product for you. For Wireless LAN adapters, please go to the Wireless LAN section on page 6 for details.

Network Adapter Specification Table

Model	Interface	10/100M	10/100/1000M	Wake-On-LAN	Boot ROM	Wii™ Support
Gigabit Ethernet Adapter						
GE-2032R v3	32-bit PCI		●			
PCI Fast Ethernet Adapter						
LFE-8139ATX v1.3	32-bit PCI	●		●	▲	
EtherWe-1000U	USB	●				●

● Yes   ▲ Optional

GE-2032R v3

`Vista` `Gigabit` `PCI` `10/100/1000 Mbps`

32-bit Gigabit Copper Ethernet Adapter

Designed with 32-bit PCI interface, the GE-2032R v3 it can be installed in all desktop PCs. With up to 2000Mbps throughput in full duplex mode, sharing files and multi-media device over network is just as fast as using your own PC. Best of all, it uses the same Cat.5 cable and is compatible with all the 10/100Mbps devices. Moreover, the RJ-45 is equipped with auto-MDI/MDI-X function to eliminate all the cabling hassles. 802.1P/Q Priority and Tag VLAN support is provided for advance users.

- 32 PCI Bus Master Interface
- 10/100/1000Base-T RJ-45 Port
- Supports PCI bus 66 or 33Mhz
- Low Profile kit for mini PC.
- Support 802.1Q Tag VLAN, Wake-On-LAN
- Driver support for various operation systems

LFE-8139HTX v1.3

`PCI` `10/100 Mbps` `WOL` `Boot ROM` `WHQL`

PCI Fast Ethernet Adapter

The LFE-8139HTX v1.3 is a WHQL certified PCI Fast Ethernet adapter, therefore, there is no need to install any driver. Just plug in and Windows will finish the driver installation for you. The auto-sensing RJ-45 connector can run in 10Mbps or 100Mbps mode. The Wake-On-LAN feature let your PC wakes up when there is any network traffic. Bootrom socket is available for optional Boot ROM support.

- 32 PCI Bus Master Interface
- 10/100Mbps RJ-45 Port
- WHQL Certified
- Wake-On-LAN support
- Boot ROM Socket
- Driver support for various operation systems

EtherWe-1000U

`Wii Support` `USB 2.0` `10/100 Mbps` `Vista` `WinXP` `Win 2000` `MAC`

USB2.0 Ethernet Adapter

The EtherWe-1000U is a Hi-Speed USB 2.0 10/100Mbps Ethernet Adapter that can to plug into an available USB port on a Wii™, to link up with the internet at must faster speed than the wireless solution.

- Working with Windows 2000, XP, Vista, Vista 64
- Compatible with Wii
- Access Internet from Wii USB Port
- Zero Installation Plug in Play

* Wii is a trademark of Nintendo

PC/Mac : Wired Environment

Internet — ADSL/Modem — Wired Router — EtherWe-1000U — PC USB port

Wii : Wired Environment

Internet — ADSL/Modem — Wired Router — EtherWe-1000U — Wii USB port

Plug & Play

Wii™
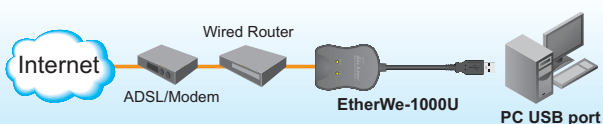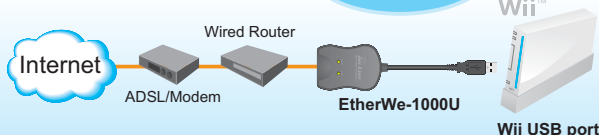
Fiber Optic Media Converters

OV-MCR116

OV-110

OV-1000

OV-1200

OV-MCB100

Fiber Optic Standards				
Standard	1000Base-LX	1000Base-SX	100Base-FX (Multi-Mode)	100Base-FX (Single-Mode)
Fiber Type	Single mode	Multi-mode	Multi-mode	Single mode
Speed	1000 Mbps	1000 Mbps	100 Mbps	100 Mbps
Laser Type	1300 nm Long Wave Laser	850 nm Short Wave Laser	850 nm Short Wave Laser	1300 nm Long Wave Laser
Link Distance (Full Duplex)				
65.5um MMF	550 m	275 m	2 km	Unable to Use
50um MMF	550 m	550 m	2 km	Unable to Use
10um SMF	5 km	Unable to Use	Unable to Use	15 km or above
9um SMF	10 or 20 km	Unable to Use	Unable to Use	15 km or above

MMF=Multi-mode Fiber, SMF=Single mode Fiber, m=meters, km=kilometers

OV-110 series:10/100Base-TX (Copper) to 100Base-FX(Fiber)	
OV-110TMT	10/100Base-T to multi-mode 100Base-FX, ST
OV-110TMC	10/100Base-T to multi-mode 100Base-FX, SC
OV-110TSC/15	10/100Base-T to single mode 100Base-FX, SC, 15KM
OV-110SC/30	10/100Base-T to single mode 100Base-FX, SC, 30KM
OV-110SC/60	10/100Base-T to single mode 100Base-FX, SC, 60KM
OV-113SC/20	Single-mode : 20KM WDM converter TX:1310nm RX:1550nm
OV-115SC/20	Single-mode : 20KM WDM converter TX:1550nm RX:1310nm
OV-1000 series:1000Base-T to 1000Base-SX/LC (Copper to Fiber Gigabit Converter)	
OV-1000TSC	1000Base-T to 1000Base-SX multi-mode, SC
OV-1000TLC/20	1000Base-T to 1000Base-LX single-mode 20KM, SC
OV-1200 series:1000Base-SX/LX to 1000Base-LX (Fiber to Fiber Gigabit Converter)	
OV-1200SLC/10	1000Base-SX multi-mode to 1000Base-LX single-mode 10KM, SC
OV 19" Rack Chasis series	
OV-MCR116	19" Rack Chasis, up to 16 slots, with one redundant power supply
OV-MCB100	Management module, Remote control and Setting
OV-MCR-PS48V	Redundant Power Supply, DC Power, -48V
OV-MCR-PS150	Redundant Power Supply, AC Power, 150W

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Maximum Security at Minimum Cost

As the Internet and Wireless LAN become more popular and pervasive, network security has become a primary concern. Many enterprises hesitate to use wireless LAN network because fear of security breach. In addition, the constant virus and hacker attacks have seriously hurt the productivity of many companies. PC based software Firewall solutions are often very costly and complicated to use. For this reason, we developed the AirLive Security Gateways featuring powerful firewall that allow you to control what each user can or can not do - down to the smallest details. Then we integrate bandwidth manager, Multi-WAN, and VPN servers into one complete and cost effective solution for SMB. In the Hotspot Gateway front, the AirLive MW-2000S features AP management, Multi-Service Zone, Multiple Service Provider support, and Ticket Printer support that instantly enable hotel, airport, and conference center to make profit on Internet service. Their affordable prices mean you can recover your investment quickly. Starting in 2006, our product portfolio expands into the Email Server and Internet Activity Recorder solutions. When you need a simple and reliable security device, please take a closer look at AirLive's Security product line.

Security Products

Model No.	Page Number	Pre-Annouced Product	Built-in Wireless	LAN Port	WAN Port	Inbound Load Balance	Outbound Load Balance	DMZ Port	Ticket Printer Port	Hard Disk	CPU	Bandwith Management	IPsec VPN(3DES)	IPsec VPN (no encryption)	Wireless VPN	IPSec Server(Tunnel)	PPTP Server(Accounts)	PPTP Client	VPN Hub	VPN Trunk	SMTP(s)/POP3(s)/IMAP	DNS Server	Email Backup	Webmail/WebDisk	Email Recorder	Messenger Recorder	Telnet/FTP Recorder	Webpage Recorder	Number of Managed AP	Auto AP Discovery	Managed IP	General Account	Guest Account	Concurrent Users	Anti-Spam	Anti-Virus	ARP Protection	Instant Account Generation	Ticket Printing	Credit Card Billing	Account Bandwidth	Policy Base	Schedule Policy	P2P Blocking	Messenger Blocking	Skype Blocking	Syslog	Anomaly Flow IP	Mail Alert	Upstream QoS	Downstream QoS	Throughput	By IP/Application	By Policy
Firewall Gateway																																																						
RS-3000	63			1	2	●	1				I	50	16	18		100	32	16	●	●												200			●	●	●					●	●	●	●	●	●	●	●	●	●	50	●	●
RS-2000	63			1	1						I	50	15	16		100	32	16	●													200			●	●	●					●	●	●	●	●	●	●	●	●	●	50	●	●
RS-1200	62			1	2			1			I	25	9	11		100	32	16	●													200					●					●	●	●	●	●	●	●	●	●	●	25	●	●
IP-2000VPN	61			3	1	●	1				M		2	3		10	10																									●						●		●				
Public Access Internet Gateway																																																						
IGR-2500	69			8	5	●	●	1			I																											●					●	●	●					●	●	●	
IGR-1500	69			1	4	●	●				M																																●							●	●	●	
Internet Acitivity Recorder																																																						
IAR-5000	64			2	0					●	C															●	●	●	●														●	●	●					●	●		
Email Server Appliance																																																						
ES-4000	64			2	0					●	C										●	●	●	●													●															
Hotspot Authentication																																																						
WIAS-1200G	67		●	4	1					●	I																						40	500	2000	50				●	●	●	●	●	●	●					●			●	●
Campus Network System																																																						
IAS-2000	67			2	2	●		●			C																						200	2000	2000	400				●	●		●	●	●					●			●	●
AP Management Gateway																																																						
MW-2000S	65			5	2	●		●			I					●													12	●	40	500	2000	120				●	●	●	●	●	●	●			●		●			●	●

● Yes ▲ In development I Intel IXP M MIPS C Celeron

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VPN Technology

Virtual Private Network. VPN is a technology to create secure private networks over Internet.   Instead of using expensive dedicated leased lines, VPN allows companies to build secure network tunnels using public network such as Internet to link networks in remote locations. The easiest way for network administrators to build VPN connections is to use router that have built-in VPN servers.

LAN-to-LAN VPN

Office A   Office B

IPsec VPN   Internet   IPsec VPN

VPN Router   VPN Router

LAN   LAN

If a company want to link 2 remote office's networks together through the Internet. It needs to build a Point-to-Point VPN connection. The VPN protocol to use for this purpose is the IPsec protocol. If the users need to see the remote computer names in My Network, the VPN router should support NETBIOS Broadcast function or need to build WINS server on both side.

Dynamic VPN

Office

Dynamic IPsec VPN   Internet   IPsec VPN

VPN Router

LAN

Remote PC

Also known as "Road Warrior" VPN. It let remote users with a dynamic IP to build IPsec VPN tunnel with the company's VPN network.

Client to Server VPN

Home   Office

PPTP/L2TP VPN   Internet

PPTP/L2TP Client   PPTP/L2TP Server

Also known as dialup VPN. If an outside employee wants to login into company's network, the easiest way is using the PPTP or L2TP VPN Protocol. A network administrator simply creates a VPN account with username and password for the user. Then, the user can use Windows PPTP/L2TP client to login into company's network. However, the VPN router must support MPPE (Microsoft Point-to-Point Encryption) if users want to have encryption for their PPTP/L2TP VPN tunnel.

Model	IPsec Server	PPTP Server	NETBIOS Broadcast	MPPE	Page No.
RS-1200	Yes	Yes	Yes	Yes	62
RS-2000	Yes	Yes	Yes	Yes	63
RS-3000	Yes	Yes	Yes	Yes	63
IP-2000VPN	Yes	Yes	Yes	Yes	61

OvisLink Corp. provides you with Step-by-Step instructions on how to build all 7 different types of VPN connections when your purchase our VPN routers!

IP-2000VPN

Office-to-office IPSec VPN   Dial-UP PPTP VPN   SPI & DoS Firewall   Multi-DMZ   UPnP   Schedule

Internet VPN Router

The AirLive IP-2000VPN features IPSec and PPTP server to encrypt the data exchanged between 2 offices or working from home. In addition, built-in with SPI firewall and DoS protection prevent Internet hacker's attack. The router features PPTP, L2TP, PPPoE, DHCP, Fixed, Bigpond ISP and SingTel RAS supports for compatibility with most of the world's ISP.

- Build Office-to-Office Network with IPsec VPN Server
- Working from Home to Office with PPTP VPN Server
- SPI and DoS Firewall
- Setup Wizard for simple installation
- Step-by-Step VPN Example Guide

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Security Gateway

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Security Firewall Gateway

The AirLive RS series is a family of full-featured policy based firewall gateways that integrate the most useful and crucial security functions into one single device. They feature 2-way Bandwidth Manager, Policy Firewall, Authentication, Content Filtering, Dual WAN, Multi Virtual Server, and VPN server functions.

2-WAY Bandwidth Manager

The RS series bandwidth manager control both upstream and downstream bandwidth for IP, IP group, or applications. Therefore, administrator can define guaranteed bandwidth and maximum bandwidth for a particular computer or application.

Policy Based

The RS series' enterprise grade Policy firewall let administrators define precisely when and what each IP, IP group, application can do. The firewall can control station based on IP or MAC address. Scheduling feature can define precisely the date and time when service is available. Policy list function allows multiple-policy grouping to create comprehensive firewall controls.

Multi-Virtual Server

Normally, a virtual server can only open a service port to one single machine. The RS series' Multi-Virtual-Server function will perform automatic load balancing for up to 4 computers. This means you can have multiple player for the latest online games or have multiple VoIP devices.

Content Filtering

The RS series can limit access of some Internet applications such as Java, Pop-up, MSN, Yahoo Messenger, ICQ, or Skype. Therefore, it can greatly reduce the possibility of virus infection and the waste of office bandwidth.

Dual WAN

The RS-1200 and RS-3000 has 2 WAN ports to increase upstream bandwidth. It also provides important auto-backup feature that will switch Internet services when one ISP service failed.

Authentication

Although the RS family do not provide the instant account generation feature for our Internet Access Gateways. They still provide web-based account authentication for up to 100 accounts.

Bandwidth Manager
Internet
2M 1M
PC

Firewall
Internet
Fire Wall
PC

Password Authentication
Login name:
Password:
Internet
Access to Internet
PC

Dual WAN Connction *
Internet
Cable Modem
ADSL Modem
WAN2 WAN1 ISP
RS-1200
Multiple Subnet
PC PC
LAN2 LAN1
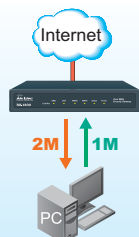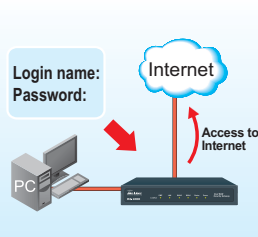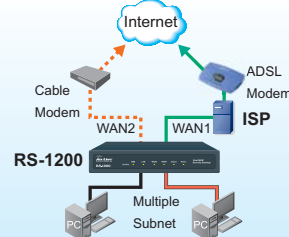
*RS-1200 only

RS-1200

Dual-WAN | 2-Way Bandwidth | DMZ port | VPN | Policy | Schedule | Authentication | IM/P2P Filter | Content Filter

Dual WAN Security Gateway

The RS-1200 is the best selling security firewall gateway for a simple reason; it includes an incredible amount of security features at unbeatable price. Starting with 2-WAN ports that can provide outbound load balancing and auto service backup function, it ensures your Internet connection is always up and ready for service. The integrated VPN servers allow workers to work from remote or to establish inter-office LAN connections. The hardware DMZ port let administrators set up Internet servers without risking exposing the LAN security. Furthermore, the 2-way bandwidth manager can limit or guarantee bandwidth, while using policy firewall to control each PC's access. The IM/P2P Filter and content filtering can control IM/P2P access, data transferring and Internet services. It is truly a complete solution for enterprise security.

- 2 x WAN ports + 1 x LAN port + 1 DMZ port
- Outbound WAN load balancing and fail-over
- Intel IXP 266MHz RISC CPU
- Upstream and Downstream Bandwidth Control (25Mbps)
- IPsec and PPTP VPN Server, PPTP Client
- Complete Policy Based firewall
- Authentication for 200 users

- Accounting Report, System Log, Email notification
- Content Filtering: URL, JAVA, Pop-UP, Active-X, Download and Upload
- IM/P2P Filtering: Several well-known IM and P2P software
- Blaster control to limit LAN-side DoS attack.
- 70Mbps NAT throughput, 9Mbps 3DES VPN throughput

RS-2000

| 2-Way Bandwidth | VPN | Policy | Schedule | Authentication | IM/P2P Filter | Content Filter |

VPN Security Bandwidth Gateway

The RS-2000 is the high performance security gateway powered by Intel IXP 400Mhz CPU. This enables it to deliver phenomenal 50Mbps bandwidth management and 90Mbps NAT throughput. The integrated VPN servers allow workers to work from remote or to establish inter-office LAN connections. The 2-way bandwidth manager can limit or guarantee bandwidth, while using policy firewall to control each PC's access. It even provides authentication function as part of the policy. The IM/P2P Filter and content filtering can control IM/P2P access, data transferring, and else Internet services. It is truly a complete solution for enterprise security.

- 1 x WAN port + 1 x LAN port
- Intel IXP 400MHz RISC CPU
- Upstream and Downstream Bandwidth Control (50Mbps)
- IPsec and PPTP VPN Server, PPTP Client· Complete Policy Based firewall.
- Multi-Virtual Server support, auto load balancing
- Authentication for 200 users

- Accounting Report, System Log, Email notification
- Content Filtering: URL, JAVA, Pop-UP, Active-X, Download and Upload
- IM/P2P Filtering: Several well-known IM and P2P software
- Blaster control to limit LAN-side DoS attack.
- 90Mbps NAT throughput, 15Mbps 3DES VPN throughput

Anti-Spam

The RS-3000 features Anti-Spam filter function to filter out the spam emails. Administrators can choose to remove suspicious emails or mark the spam emails with pre-defined subject to notify the users. The self learning algorithm and Bayesian Anti-Spam systems provide constant improvement for filter's accuracy as the machine usage grow.

RS-3000

Check for Spam

No   Yes

PC

Send to PC

Remove or notify user
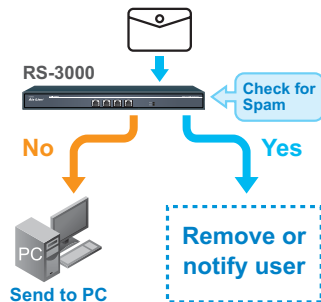
Anti-Virus

The RS-3000 features Anti-Virus function that check each email for suspicious virus. Once virus are detected, the email can be either removed or transfer to a pre-defined account. The RS-3000 uses CLAM anti-virus utility, therefore, virus signature updates are free of charge.

Incoming email

RS-3000

Check for Virus

Outgoing email
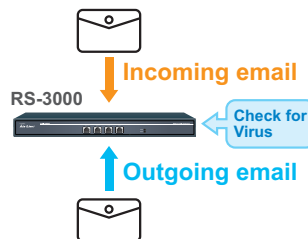
IDP

IDP(Intruder Detection and Protection) is a complete protection system for your office network. It protects your network from possible virus and hacker attacks. The RS-3000's not only check email virus, it also check for Web, FTP, P2P, and IM viruses. Furthermore, you can custom define the signatures to prevent your network from various hacker attacks.

IDP

Virus   Hackers

RS-3000

Detect and Stop Virus / Hacker Attacks

LAN

Soft Heaven
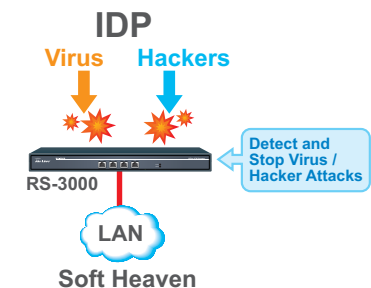
RS-3000

| Anti-Spam | Anti-Virus | Dual WAN | VPN | Policy | Schedule | Authentication | IM/P2P Filter | Content Filter | IDP |

Office UTM Gateway

The RS-3000 is the ultimate UTM (Unified Threat Management) gateway designed for all the security need of a SMB office. It is so affordable that there is no reason why you are leaving your network unprotected any more. Starting with 2-WAN ports that can provide outbound load balancing and auto service backup function, it ensures your Internet connection is always up and ready for service. The Anti-Spam and Anti-Virus filter protect your company emails from attack. Best of all, the IDP (Intruder Detection and Protection) system scan for possible virus and hacker attack from Internet. The integrated VPN servers allow workers to work from remote or to establish inter-office LAN connections. Furthermore, the 2-way bandwidth manager can limit or guarantee bandwidth, while using policy firewall to control each PC's access. It even provides authentication function as part of the policy. The IM/P2P Filter and content filtering can control IM/P2P access, data transferring, and else Internet services. It is truly a complete solution for enterprise security.

- 2 x WAN port + 1 x LAN port + 1 DMZ port
- Intel IXP 425MHz RISC CPU
- Upstream and Downstream Bandwidth Control (50Mbps)
- IPsec and PPTP VPN Server, PPTP Client· Complete Policy Based firewall.
- Multi-Virtual Server support, auto load balancing
- Authentication for 200 users

- Accounting Report, System Log, Email notification
- Content Filtering: URL, JAVA, Pop-UP, Active-X, Download and Upload
- IM/P2P Filtering: Several well-known IM and P2P software
- Blaster control to limit LAN-side DoS attack.
- 90Mbps NAT throughput, 15Mbps 3DES VPN throughput

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Email Server

ES-4000

Anti-Virus	SMTP	POP3	IMAP	160GB HD	DNS Server	Web Mail	Web Disk	IPC	HA

Email Server Appliance

If your company wants to run your own email service, the ES-4000 is the perfect all-in-one solution. Running on the Linux OS software and IPC hardware, it provides much better reliability and performance than PC-based solutions. Configuring using the simple-to-use Web UI interface, account creation and email maintenance are extremely simple. Using the Easy-Transfer technology and built-in DNS server, you can move the email service from your old email server to the ES-4000 quickly. Administrator can create unlimited accounts and have full control over mail quota and file size limit. Better yet, users can check their own email anywhere from the Web Mail server.

- Celeron 1.2G 1U rack mount IPC
- Linux OS
- 512MB SDRAM, 128MB Flash
- 160GB Hard Drive
- SMTP, POP3, IMAP and DNS server
- Clam Anti-Virus protection

- Web Mail Server
- Web Disk
- Mail Copy, Mail Quota, Mail Size limit
- Mail transfer and Account transfer from existing email service.
- Unlimited account support
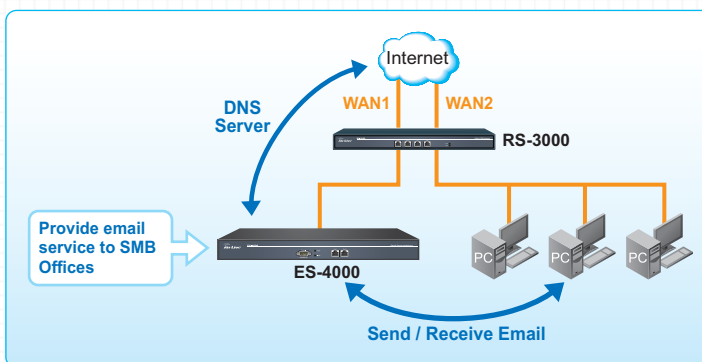
Internet Activity Recorder

IAR-5000

IM Recorder	Email Record	HTTP Record	WebMail Record	FTP Record	Telnet Record	P2P Filter	IM Authentication	160GB HD	IPC

Internet Activity Recorder

Is your office's productivity dropping because of the MSN messenger? Are you losing sensitive company information due to security breach? The IAR-5000 is the answer for you. The IAR-5000 records most activities with the Internet from the office. Whether it is email, messenger service, website, FTP, Telnet; the IAR-5000 records all the activities for you into its built-in 160GB Hard Drive or NAS. It can even stopped encrypted MSN messages. You can select which users to record and which users not to record. It work in either sniffer or bridge mode to integrate instantly into the network environment.

- Celeron 1.2G 1U rack mount IPC
- Linux OS
- 160GB Hard Drive
- POP3 and SMTP recorder
- MSN, ICQ, QQ, Yahoo messenger record

- Webpage visit record
- Telnet and FTP record
- Set record and ignore user list
- Disk management
- Work with NAS storage for backup

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP
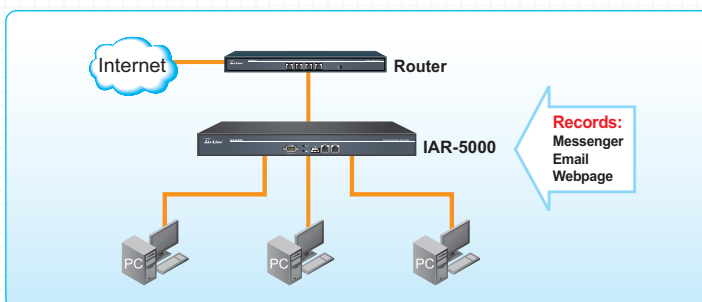
Internet Access Gateway

The AirLive Internet Access Gateway is an all-in-one solution for hotel, school, coffee shop, restaurant, or residential buildings to provide Internet Access. It is an all-in-one solution with hotspot authentication, instant account generation, Web Pop-up login, accounting report, personalized frontpage, and group policy firewall.

Hotspot Authentication

The hotspot authentication system requires each user to enter correct password before allowing access. It features 3 different account types including permanent, guest and instant generated account. Permanent account are suitable for monthly subscribers while the instant generated account is suitable for hotel and coffees shop provider.

Instant Account Generation

When using instant generated account type, the hotspot gateway will automatically generate a set of user name and password. Therefore, the operator requires absolutely no network knowledge. Just push a button on the ticket printer or the web UI's account generation page, then the gateway will instantly generate create a new account. Up to 10 different account category base on different usage time, traffic quota, and price can be defined. Up to 2000 instant generated account can be created at once.

Web Pop-up Login

When a user opens a browser and tries to access Internet. The computer will automatically pop-up a windows asking for username and password. After the user completed the process, a new pop-up window will appear to remind user of remaining time and for logging off.

Accounting Report

The gateway will keep tracks of each permanent user's usage time and traffic. Therefore, the service provider can charge by usage time or traffic at the month end.

Personalized Frontpage

The service provider can personalize the pop-up windows and the default front page. Therefore, a hotel will have its own exclusive login page and the user will be redirect to the hotel's service website after login.

Group Policy Firewall

The permanent, guest, or instant generated accounts can have different upstream bandwidth and firewall policy. So each group can have different Internet speed and service restriction.

Step 1
Create up to 10 different account types with usage time and prices.

Step 2 When user purchase Internet Access. The operator can print out user's account information by

A Using your PC to instant generate the account and print out the information

B Pushing the button on the ticket printer to automatically generate an account.

Step 3
Give the ticket to the customer

Step 4
When the customer log into the Internet, enter the username & password from the ticket.

Step 5
Successful Connection! Now the Hot Spot system keep track the remaining time or traffic for each individual users.
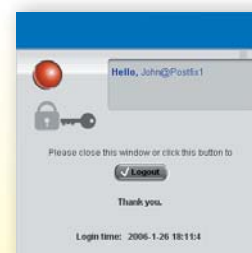
Internet Access Gateway

Model No.	Wireless Built-in	Optional Ticket Printer	Instant Account	Concurrent Users
WIAS-1200G	Yes	Yes	500	50
IAS-2000	No	Yes	2000	400
MW-2000S	No	Yes	500	120

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

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Multiple Service Zones

Service zone means to specify a virtual zone for the service. Each service zone owns its Hotspot and policy setting, so you can deploy several authorized system to different service provider in one single device. Integrate with WLA-5000AP Multiple SSID feature, each different wireless services can be installed at different service zones, and to be managed by its own authorized rule and bandwidth control. Furthermore, administrator can construct a wireless environment with several WLA-5000AP devices, and specify the group user with dedicated SSID. So the specific group of users can always access its own resource in this wireless environment, no matter where he goes.

Multiple-SSID+VLAN

(!) The new MW-2000S and WLA-5000AP firmware can use VLAN tag to separate traffics on the same AP into different groups.

MW-2000S

SSID A = Work Group A
SSID B = Work Group B

WLA-5000AP

SSID A   SSID B   SSID A   SSID B
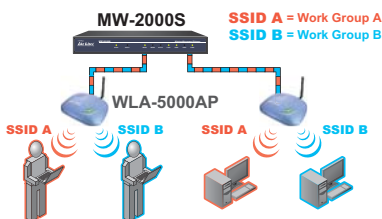
Multiple Service Zone Example

(!) Like the Airport's Hotspot Zone. Many service providers can share one single AP for HotSpot Service. Yet, the billing goes correctly to each service provider.

MW-2000S

SSID1:Orange

WLA-5000AP

SSID2:O₂   SSID2:Swisscom

Credit Card Billing Support

(!) The credit card billing function let Hotspot operators generate revenue without any caretaking.

Internet

WLA-5000AP   **MW-2000S**
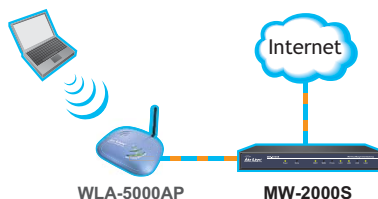
AP Management

The AirLive Hotspot Management Gateway features AP Management and Local VPN to deliver the maximum level of wireless security for Enterprise and WISP. Managing up to 12 WL-5460AP or WLA-5000AP, it brings dedicated AP management system at much more affordable price than available solutions in the market. To achieve the same functionality using the competitor's products, dedicated APs are required and are more expensive.

AP Management

The WSMS system makes AP installation and management much more powerful. It will automatically discover and assigns IP to each AP. The administrator can then view each AP's status and disable/enable its wireless function. When an AP is not working, the system will automatically inform the administrators. Furthermore, administrator can even configure each AP's setting in an unified interface. In sum, it is a must-have product for enterprise, hotspot provider, school, and community network to provide wireless service.

Wireless VPN

The wireless security encryption has made an important strive with the introduction of WPA and WPA2. Nevertheless, the wireless VPN provides even higher security for enterprise network. When a wireless user connect to the WSMS system, the gateway will automatically send a java VPN client to the computer and establish IPsec VPN tunnel without user's notice.

Authent

The authentication
and LAN access usin
The AirLive authent
wireless ports into 2
require regular auth
private port give ad
users direct access.
account includes re
accounts for differe

Step 1   Connect the AP to the AP Management Gateway and enable "Auto Discover" function

MW-2000S

Step 2   The AP Management Gatew
to each AP

MW-2000S

MW-2000S

Hotspot | PayPal | AP Management | Service Zones | Local VPN | WAN Fail-over | WAN Load Balance | Hotel | Cafe | Restaurant

Hotspot Management Gateway

The MW-2000S is the incredible all-in-one Hotspot Management Gateway that combines AP management, Service Zones, and hotspot authentication system into one single gateway. The AP management let administrators to central manage multiple APs at once. You can choose from our WL-5460AP or WLA-5000AP multi-function AP. The AP management gateway will keep track of the AP status and alert administrators when there is a failure in the AP network. Service Zones offer several virtual zones for different services, each Service Zone owns its Authentication system and Policy rule. At last, we add the Hotspot Authentication function to let administrator define different authentication levels for each users.

- Hotspot Authentication Function
- PayPal payment system support
- Group Policy function
- Wall Garden, Web/Email Trigger authentication, email notification
- Managing up to 12 APs
- AP Management: Auto discovery, status, and configuration
- Multiple Service Zones
- Local VPN

WIAS-1200G

802.11G | WDS | Hotspot | Authentication | PayPal | Walled Garden | Ticket Print | Hotel | Cafe | Restaurant

Wireless Hotspot Gateway

The AirLive WIAS-1200G are all-in one solution for Hotel, Cafe, Restaurant, or WISP operators to sell Internet connections. It features hotspot authentication + wireless function + ticket printing capability. This means providing and selling Internet services has finally become simple and affordable for everyone. The Gateway features 2 public ports that needs authentication and 2 private LAN ports for administrators and privileged users. The walled garden feature let administrator control exactly which website the user can go. There is even an IP probing utility that can check alive status for up to 40 devices.

- 802.11g Wireless + WDS mode
- Intel IXP processor
- 1 x WAN port + 4 x LAN port
- 1 x Ticket Printer Port
- 2 public LAN port and 2 Private LAN port
- 500 Permanent Accounts + 2000 Instant Accounts
- Walled Garden, Web/Email Trigger authentication, email notification
- Upstream Group Bandwidth Control, Keep Alive Status
- Paypal credit card authentication

Accessories:

TP-1000S* Ticket Print with LED, select up to 10 account types.

provided by third party.

Bandwidth Manager | **Password Authentication** | **WDS Repeater**
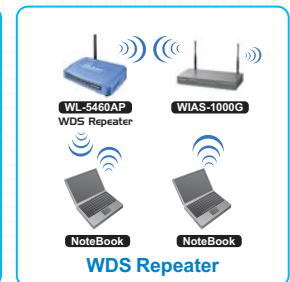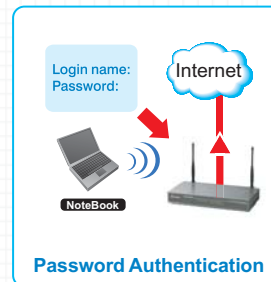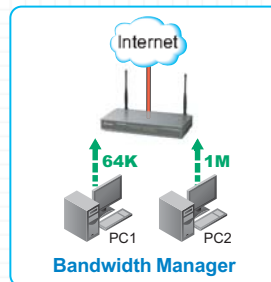
IAS-2000

Internal Routing | Routing | Hotspot | Authentication | Walled Garden | Ticket Print | Hotel | Campus Network | Network Community

Internet Access Gateway

The IAS-2000 is a high performance authentication system that is designed for large hotel, airport, and campus network. Featuring 2 WAN ports for backup redundancy, it is capable of round the clock operation. With the high performance Celeron processor, it can handle more than 400 concurrent users and 2000 permanent accounts. The special LAN-to-LAN bridge is designed for campus network. Put the wireless network on one LAN port and the wired network on another, then enable inter-LAN routing. When the wireless network needs to access the LAN or Internet, the gateway will ask for authentication. The gateway can also track the alive status for up to 200 IP devices to ensure large wireless network are functional.

- Intel Celeron processor
- Rack mountable IPC
- 2 x WAN port with auto backup
- 1 x public + 1 x private port
- 2000 Permanent Accounts + 2000 Instant Accounts
- over 400 concurrent users
- Walled Garden, Web/Email Trigger authentication, email notification
- Upstream Group Bandwidth Control, Keep Alive Status

Campus Network
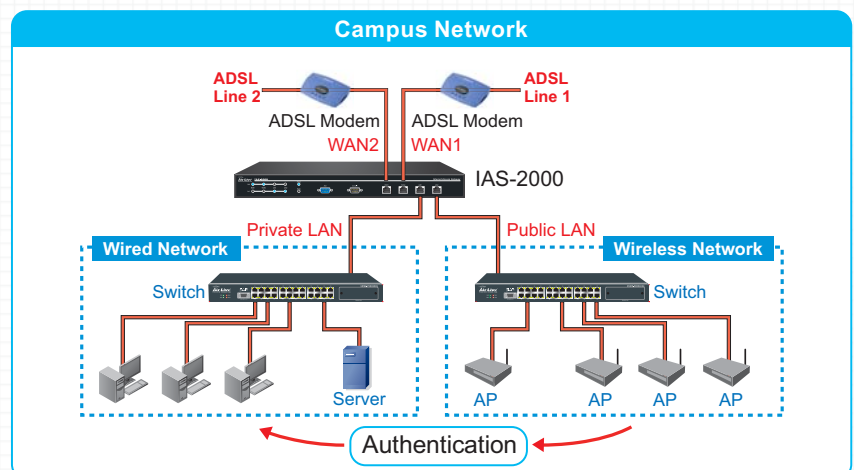
Public Internet Access Gateway

The AirLive IGR series is designed for public access environment, such as cyber café, exhibition, or the other public place for the Internet access. The embedded multiple wan connections, bandwidth controlled, and intrusion protected feature, provide plenty of users into the Internet accessed environment with stable and sufficient bandwidth.

Multiple WAN connection

Up to 4 or 5 WAN connections are supported with IGR series product, the network constructer can easily combine many ADSL or cable connection to enlarge the totally bandwidth.

Outbound Load Balance

The Outbound Load Balance function can enlarge the useful bandwidth, and prevent the network bottleneck in one connection. The balance type includes Session, Weight round robin, and Dynamic Traffic.

Inbound Load Balance

The Inbound Load Balance works to separate incoming packets, and average the access packets to servers. The balance type includes Session, and Weight round robin.

Ultra Smart Sharing

Ultra Smart Sharing function can prevent the disconnection by specific server, such as banking system or Internet on-line game server.

QoS

IGR series product can manage the bandwidth by services and IP address, to guarantee the access bandwidth and keep the service server working properly.

Intrusion Security

IGR series product provides the protected mechanisms to secure internal client, including Local IP Filtering, Intrusion Security, DoS, URL Filtering, and Session Limit.

Inbound Load Balance
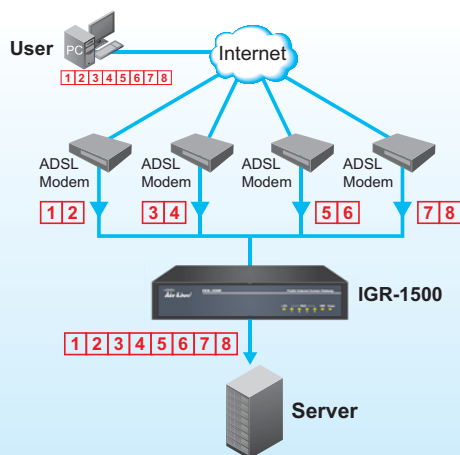
Bandwidth Manager

Multiple WAN connection

Outbound Load Balance

Ultra Smart Sharing

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP
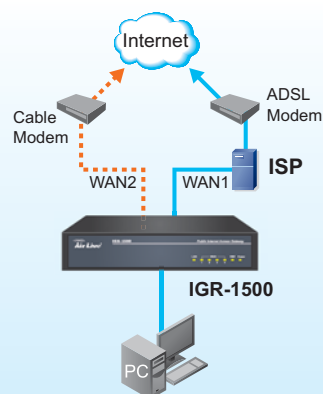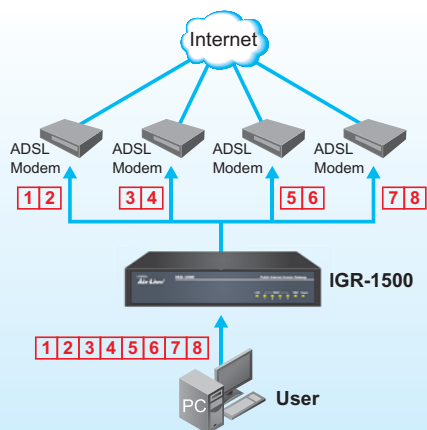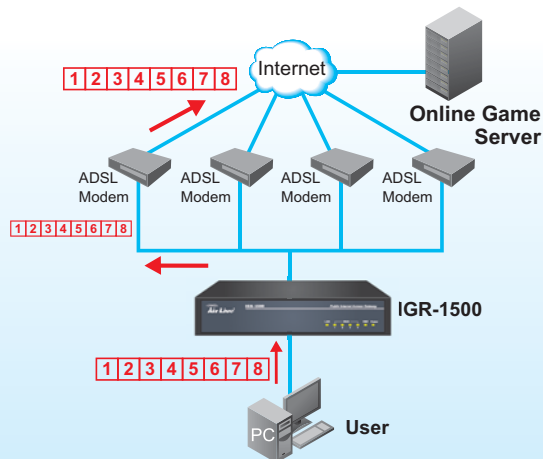
IGR-1500

| Multiple WAN | Outbound Load Balance | Inbound Load Balance | Ultra Smart sharing | QoS | DoS | Multi-NAT |

Public Internet Access Gateway

The IGR-1500 is a cost effective gateway for public Internet access environment. Featuring the Inbound/ Outbound load balance to improve the network performance; Ultra Smart Sharing function can keep the user to access banking system or Internet on-line game from being disconnected; and QoS function works to limit the usage bandwidth and preserve the bandwidth for access. Approximately up to 80 computers can be handled simultaneously.

- Cavium /150M CPU
- 2 MB Flash + 16 MB DRAM
- 4 x WAN ports + 1 x LAN port
- Up to 80 ~ 100 concurrent users
- Outbound load balance

- Inbound load balance
- Ultra smart sharing
- Intrusion Security
- Multi-NAT

- Software DMZ
- Virtual Server
- Static route, RIPv1, v2
- QoS

IGR-2500

| Multiple WAN | Outbound Load Balance | Inbound Load Balance | Ultra Smart sharing | QoS | DoS | Multi-NAT | ARP Protection | Hardware DMZ | IM/P2P Blocking |

Public Internet Access Gateway

The IGR-2500 provides the similar functions of IGR-1500, furthermore it offers a changeable interface to be selected the port type as WAN or DMZ. So IGR-2500 can be set to 5 WAN connections at maximum, or with 4 WAN connections and one hardware-based DMZ. Besides, IGR-2500 is special designed for the amount of hundreds users, and it is acceptable for the concurrent user over 150 to access Internet simultaneously.

- Intel IXP 533M CPU
- 4 MB Flash + 128 MB DRAM
- 4 x WAN ports + 8 x LAN port + 1 x WAN/DMZ changeable
- Up to 300 ~ 400 concurrent users
- Hardware and Software DMZ

- Outbound load balance
- Inbound load balance
- Ultra smart sharing
- QoS
- Intrusion Security

- ARP Protection
- Multi-NAT
- Virtual Server
- Static route, RIPv1, v2
- IM / P2P blocking

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Deliver Data through Electricity Network

*P*owerLine Networking is a fairy tale type of networking technology that turns dream into reality. Using electricity wirings that are available in every single household, it can deliver network data to every corner of the house without using any wires. Just plug the Powerline devices into the electricity sockets, and the Powerline network is established. When using with a Powerline Ethernet adapter, users can attach any Ethernet equipped network device and computers. Contrary to the popular belief, the PowerLine technology is not a competitor to wireless LAN technology. Instead, it compliments the WLAN technology by providing bridge between 2 wireless networks that can not link together because of physical obstacles (such as a thick wall). The AirLive PowerLine family includes a 14Mbps PowerLine bridge, a 85Mbps HomePlug Turbo Ethernet Bridge, and a 200Mbps Powerline Bridge to fit all your application environments.

HOMEPLUG

The HomePlug PowerLine Alliance is the association that defines PowerLine networking standards. The HomePlug 1.0 spec defines the 14Mbps PowerLine standard. The new Homeplug Turbo spec increases the throughput to 85Mbps while maintaining backward compatibility with 14Mbps devices. Toward the end of 2006, the new Powerline technology to deliver up to 200Mbps throughput for audio/ video applications.

Limitation

The HomePlug PowerLine device can cover approximately 500 square meter of space. The signal can not travel across power meter and transformer, therefore, it is not possible to create cross-building PowerLine network.

Security

Most HomePlug devices come as plug-and-play; therefore, no setup is necessary. Since the HomePlug signal can not travel across power meter, there is little risk of intruders from outside. However, HomePlug network also have security features such as Network ID and password encryption to keep your data safe and secure.

Home-2F

HP-2000E
85Mbps PowerLine Bridge

WL-5460AP
Wireless G AP

Multi-Purpose Printer

HP-1000E
PowerLine Ethernet Bridge

MFP-101U
Multi-Function Print Server

Internet

HP-2000E
85Mbps PowerLine Bridge

WT-2000ARM
Turbo-G ADSL Router

Home-1F

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP
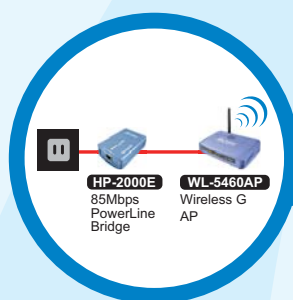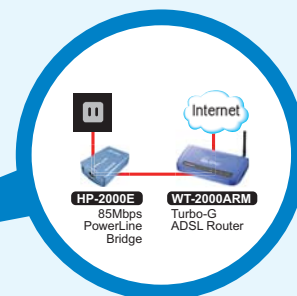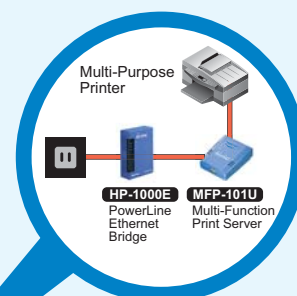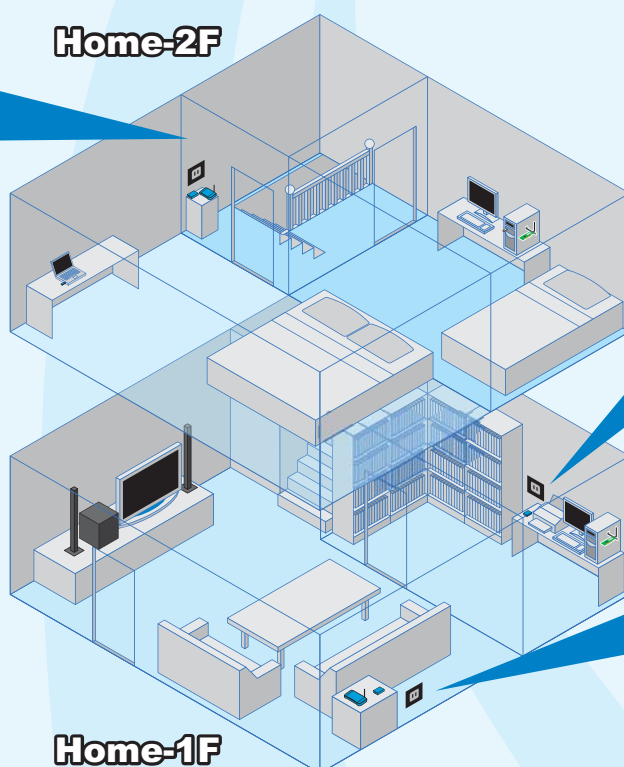
HP-1000E

`HomePlug 1.0` `14 Mbps` `Switching Power` `Zero Driver`

14Mbps HomePlug Ethernet Adapter

HP-1000E is a fast and affordable way to network your PCs at home. Using your already existing electrical wiring, you can connect computers or network device in different rooms within your home. It can also be used to expand a wireless network to "dead zones" where wireless signal can not be reached - such as in the basement. The HP-1000E requires absolutely no driver installation. But a configuration utility allows you to change username/password and data encryption for security. Switching power means you can use the device with any electrical outlet around the world.

- PowerLine Ethernet Adapter / Bridge
- HomePlug 1.0 compliant, 14Mbps
- 1 x 10/100Mbps Ethernet Port
- Zero Driver Installation
- Work with 110, 220V, and 240V electric outlets.
- Configuration Utility included

HP-2000E

`HomePlug Turbo` `85 Mbps` `Switching Power` `Zero Driver`

85Mbps HomePlug-Turbo Ethernet Adapter

HP-2000E is an ultra-fast 85Mbps PowerLine Ethernet Adapter/Bridge that is backward compatible with HomePlug 1.0 devices. Using your already existing electrical wiring, you can connect computers or network device in different rooms within your home. It can also be used to expand a wireless network to "dead zones" where wireless signal can not be reached - such as in the basement. The HP-2000E requires absolutely no driver installation. But a configuration utility allows you to change username/password and data encryption for security. Switching power means you can use the device with any electrical outlet around the world.

- PowerLine Ethernet Adapter / Bridge
- HomePlug Turbo compliant, 85Mbps
- 1 x 10/100Mbps Ethernet Port
- Zero Driver Installation
- Work with 110, 220V, and 240V electric outlets.
- Configuration Utility included

HP-3000E

`Security Push button` `200 Mbps` `Switching Power` `Zero Driver`

200Mbps Powerline Ethernet Adapter

HP-3000E is an ultra-fast 200Mbps PowerLine Ethernet Adapter/Bridge. Using your already existing electrical wiring, you can connect computers or network device in different rooms within your home. It can also be used to expand a wireless network to "dead zones" where wireless signal can not be reached - such as in the basement. The HP-3000E requires absolutely no driver installation. But a configuration utility allows you to change username/password and data encryption for security. Switching power means you can use the device with any electrical outlet around the world.

- PowerLine Ethernet Adapter / Bridge
- 200Mbps Powerline Standard
- 1 x 10/100Mbps Ethernet Port
- Zero Driver Installation
- Work with 110, 220V, and 240V electric outlets.
- Configuration Utility included

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Voice over Internet

*T*he developement of the VoIP technology in the recent years has dramatically changed how people communicate with each other. Because of the rise of ITSP (Internet Telephony Service Providers), long distance telephone fees has dropped dramatically. Now, long distance phone call is not only much more affordable, it can also be free using pure IP-to-IP phone call. The AirLive VoIP product lines cover the entire application environment for home, enterprise, and ITSP environment. Our Skype products connect your office's phone equipment to the Skype network. Our H.323 gateway makes inter-office voice communication simple yet affordable. Our SIP based products let enterprise or ITSP subscribers connect to each other through the public proxy servers. For whatever your VoIP needs, OvisLink Corp. has a product for you.

FREE!
AirLive to
AirLive Calls

*I*n 2007, AirLive starts its own free VoIP Service called "AirLive.SIP". AirLive SIP VoIP products are pre-configured with AirLive.SIP accounts so you can instantly enjoy the VoIP advantage without any complex configurations. The AirLive.sip service is currently for AirLive-to-AirLive calls only, it is currently free of charge.

VoIP Specificaton Table

Model	Page No.	Pre-released	Router Function	Description	Protocol Support	Wireless Technology	WAN Port	LAN Port	#FXS	#FXO	Features	Configrations
Skype Product												
Skyphone-1000	74		NO	Wireless Skype Phone	Skype	Bluetooth		USB	0	0	LCD Screen, Contact List	Windows Utiilty
Sky-211	74		NO	Skype Adapter	Skype	N/A		USB	1	1	Attach cordless phone or phone line	Windows Utiilty
VoIP Gateway (SIP or H.323)												
VoIP-422	76		NO	4-port VoIP Gateway	SIP or H.323	N/A	1	0	2	2	DDNS Support, QoS	WEB, Telnet, Console
VoIP-404	76		NO	4-port VoIP Gateway	SIP or H.323	N/A	1	0	0	4	DDNS Support, QoS	WEB, Telnet, Console
VoIP-440S	75		NO	4-port VoIP Gateway	SIP	N/A	1	0	4	0	STUN, Outbound Proxy	WEB
VoIP Gateway Router (H.323)												
VoIP 422R	76		Yes	4-port VoIP Gateway Router	H.323	N/A	1	4	2	2	Broadband Router, DDNS, QoS	WEB, Telnet, Console
VoIP Gateway Router (SIP)												
VoIP-211RS	75		Yes	SIP VoIP Router	SIP	N/A	1	1	1	1	IPsec VPN, STUN, Outbound Proxy	WEB
VoIP-220RS	75		Yes	SIP VoIP Router	SIP	N/A	1	1	2	0	IPsec VPN, STUN, Outbound Proxy	WEB
VoIP-210RS	75		Yes	SIP VoIP Router	SIP	N/A	1	1	1	0	IPsec VPN, STUN, Outbound Proxy	WEB
SIP ATA Box												
VoIP-111A	75		Yes	SIP VoIP ATA	SIP	N/A	1	1	1	*1	NAT, STUN, Outbound Proxy, Connect to 3 Proxy Service Simultanously	WEB, Phone configuration by IVR
VoIP-120A	75		Yes	SIP VoIP ATA	SIP	N/A	1	1	2	0	NAT, STUN, Outbound Proxy, Connect to 3 Proxy Service Simultanously	WEB, Phone configuration by IVR
IP Phone												
ePhone-1000S	77		NO	SIP IP Phone	SIP	N/A	1	0	0	0	Outbound, STUN	WEB, Keypad
ePhone-2000S	77		NO	SIP IP Phone	SIP	N/A	1	0	0	0	Connect to 3 Proxy Service Simultanously	WEB, Telnet, KeyPad

● Yes

* For explanation of network terms. Please refer to the Network Glossary section of this catalogue.
✱1 Support PSTN by Pass, but not able to make from VoIP to PSTN, vise versa.

Wireless LAN | Wireless Outdoor | Broadband | Multimedia | Ethernet Products | Security Products | Powerline | VoIP

VoIP
Technologies

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

How to Choose a Suitable VoIP Product

The following guide provides you with the basic concept of how VoIP functions. The goal is to help you choose the right VoIP products for your purpose. Nevertheless, the right decision also depends on what VoIP service providers are available in your country. Therefore, please take the following guide as it is - the elementary introduction to VoIP technology.

How VoIP Function

To make VoIP possible, 3 technology elements are required.

Codec

VoIP will not be possible without the voice compression/decompress technologies. Voice are first encoded from analogue to digital IP packets, and then decoded back to analogue voice again at the receiver end. The most popular Codecs used by VoIP today are the G.711, G.723.1, and G.729A/B. The bandwidth required by the G.711 is approximately 64Kbps per channel while the G.729A only requires approximately 8Kbps.

Voice → Encode & Compressed → Internet → Decode & Uncompressed → Voice

Hardware Interface

The VoIP hardware interface is the hardware media that connects to existing phone equipment and phone line. There are 2 types of most common analogue interface available:

FXO

The FXO ports connect to the PSTN line (analogue telephone line) or company's PBX line (the line to the extension phone). It allows the VoIP device to communicate with the ordinary telephone system. Having the FXO port is necessary if you want your device to link with PBX or outside telephone line

FXS

The FXS ports connect to your ordinary telephone or FAX. Using your telephone or FAX, your can dial out through the gateway to other VoIP gateway or IP Phone.

FXO   FXO   FXS   FXS

PSTN
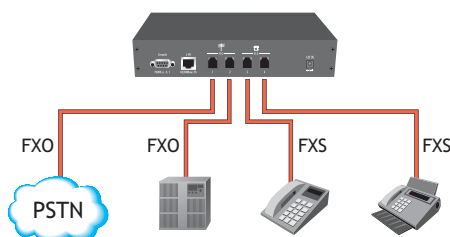
Protocol

A protocol is the language between different VoIP devices. 2 VoIP devices can only speak with each other directly if they are using the sample protocol. The most popular type of VoIP protocols are as followed:

H.323

The H.323 is one of the earliest VoIP protocol. It has the advantage of dial plan support and peer-to-peer call. Therefore, it is particularly suitable for office-to-office communication. The disadvantage is H.323 does not have a standard for NAT traversal, therefore, it is more difficult to work under IP sharing environment. In general, its setup is also more complicated.

Direct connect

H.323 Gateway   H.323 Gateway
                Gatekeeper
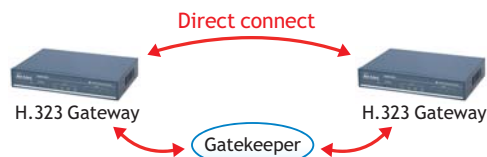
SIP

SIP protocol is the emerging popular VoIP standard. It has excellent NAT traversal support through outbound proxy or STUN servers; therefore, it can be installed easily in an IP sharing environment. However, a SIP VoIP network requires a proxy server to act as the central controller. Therefore, it is not suitable for point-to-point application. The best way to use SIP device is either to register with a free public VoIP server such as FWD / IPtel; or to register with a local ITSP (Internet Telephony Service Provider) in your country.

SIP Proxy Server   FXS

IP-Phone   SIP Router   Phone
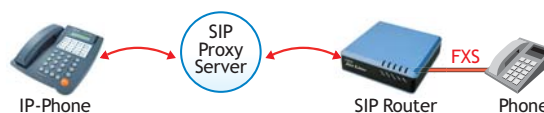
Skype

Skype is a proprietary protocol by Skype Technologies S.A. Because of its popularity with PC users, Skype adapters allow the use of ordinary phone to talk with the large PC Skype network. Nevertheless, most of the Skype adapters require the use of a PC as the server for Skype services.

VoIP Selection Diagram

For Home

IP Phone or SIP ATA Box ←Yes— Have ITSP Service?
                                    │No
IP Phone ←Yes— Need to operate without a computer?
                        │No
                Skype Adapter or Skype Phone

For Office

Have IP PBX? —Yes→ SIP Phone
        │No
For Office-to-Office Communication only. —No→ Need to Connect with Skype? —No→ H.323 or SIP Gateway (depend on ITSP)
        │Yes   │Yes
H.323 Gateway   Skype Adapter
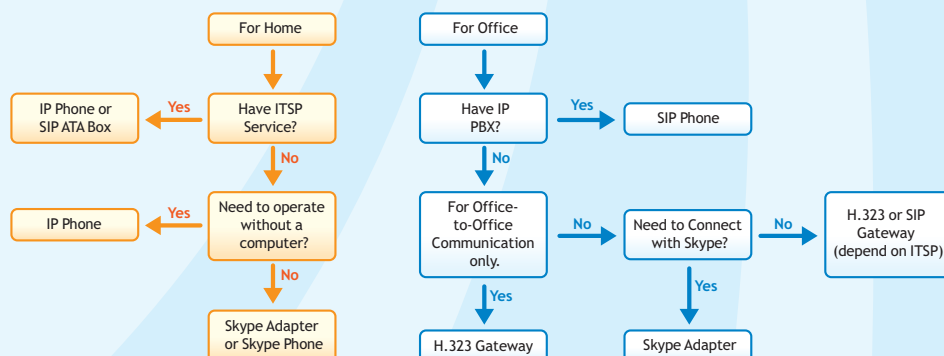
Sky-211

`USB` `FXO` `FXS` `Skype`

Skype Phone Gateway

The Sky-211 is a complete solution to let you use ordinary phone with the Skype service. Simply connect your home phone (wire or cordless) to the FXS port, connect the telephone line to the FXO port, and the USB port to your PC. Then, you can receive both normal phone call and Skype call at the same time! You can have 3-way conference between the normal phone and Skype phone at the same time! The gateway can even forward instant message to your mobile phone via SMS.

- 1 x USB 1.1/2.0 port
- 1 x FXO + 1 x FXS port
- Use the same phone for both PSTN and Skype calls
- Free 3-Way conference calling between PSTN and Skype calls

- Different tone for incoming PSTN and Skype
- Redirect calls from PSTN to Skype or Skype to PSTN
- Automatic switching between PSTN and VoIP calls.
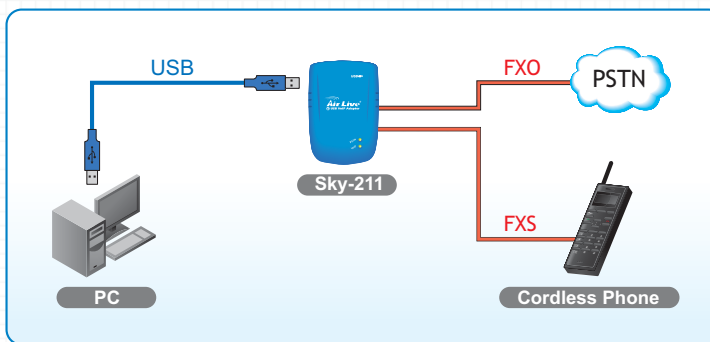
Skyphone-1000

`USB` `Bluetooth` `Skype`

Wireless Skype Phone

The Skyphone-1000 makes talking Skype wirelessly possible. The phone is composed of one USB dongle and one handset. Plugging the USB dongle into your PC and turn on the wireless handset, you can now make Skype phone call wirelessly. The handset unit features a large LCD display to show the incoming calls. In addition, you can dial from the phonebook and set different ring tone for different contact group. The keypad function includes dial, hang up, speed dial, volume control and menu selections.

- 1 x Bluetooth USB dongle
- 1 x Wireless Handset
- Bluetooth Class 1 support
- Skype phonebook and dial/hangup support

- LCD display for caller ID, contact list, and calling list
- Support Hot-keys, personal ring type, phone book
- Volume control and mute function
- Work as microphone and earphone with Yahoo/MSN messenger

Wireless LAN

Wireless Outdoor

Broadband

Multimedia

Ethernet Products

Security Products

Powerline

VoIP

VoIP-111A / VoIP-120A

`Router` `SIP` `FXO` `FXS` `STUN` `3-Way Conference` `Outbound`

SIP VoIP ATA Adapter

The VoIP-111A and VoIP-120A are SIP based VoIP adapters that convert ordinary telephone / FAX into VoIP devices. Simply plug a normal telephone/fax into the FXS port, then the telephone is turned instantly into an IP phone. The adapters also come with IP sharing function so you can share the Internet connection between VoIP and your computer.

FREE!
AirLive to AirLive Calls

3 Accounts
At the same Time !

- **VoIP-111A:** 1 FXS port + 1PSTN port
- **VoIP-120A:** 2 x FXS ports
- 1 LAN + 1 WAN port
- IP Sharing Router function
- STUN server and Outbound proxy support
- G.711, G.723.1, G.726, and G.729 a/b, iLBC Codec supports
- Call forward, call waiting, call hold, 3-way conference support
- Speed dial and phonebook support
- Web and Telnet configuration

PSTN — FXO — VoIP-111A — INTERNET — VoIP-120A — FXS — Analog Phone
FXS — Cordless Phone — SIP Proxy Server — FXS — Cordless Phone

VoIP-210RS / 220RS / 211RS

`Router` `SIP` `FXO` `FXS` `VPN` `Outbound` `STUN`

SIP VoIP Router

The VoIP-210RS / 220RS / 211RS are versatile SIP VoIP router that feature an IPsec VPN server.   They support NAT traversal through outbound proxy or STUN servers. The hotline function will automatically call a predefined number upon off-hook. Configuration guide with popular public SIP service providers are included.

FREE!
AirLive to AirLive Calls

- **VoIP-210RS:** 1 FXS port
- **VoIP-220RS:** 2 FXS ports
- **VoIP-211RS:** 1 FXS + 1 FXO port
- 1 LAN + 1 WAN port
- IP Sharing Router function
- STUN server and outbound proxy support
- G.711, G.723.1, and G.729 A/B Codec supports
- Hotline support
- IPsec VPN server
- Web configuration

VoIP-440S

`SIP` `FXS` `Outbound` `STUN`

4-port SIP VoIP Gateway

The VoIP-440S is a versatile SIP VoIP gateway that features 4 FXS ports for 4 simultaneous VoIP channels.   It supports NAT traversal through outbound proxy or STUN servers. The hotline function will automatically call a predefined number upon off-hook. Configuration guide with popular public SIP service providers are included.

FREE!
AirLive to AirLive Calls

- 4 FXS ports
- 1 WAN port
- STUN server and outbound proxy support
- G.711, G.723.1, and G.729 A/B Codec supports
- Hotline support
- Web configuration

VoIP-422 / VoIP-404

H.323 SIP FXO FXS

4-port VoIP Gateway

The VoIP-422 and VoIP-404 Voice over IP gateways are versatile VoIP gateway with powerful functions. They feature 4 analogue ports for up to 4 simultaneous voice/FAX channels. Through firmware upgrade, users can interchange between the H.323 or SIP protocol support. Software function such as hotline, DDNS, dial plan, and call transfer are all included. Configuration is available through Web, Telnet, or Console interface.

- **VoIP-422:** 2 FXS + 2 FXO ports
- **VoIP-404:** 4 FXO ports
- 1 WAN port and 1 RS-232 Console port
- H.323 or SIP firmware interchangeable
- Hotline, Call forward and transfer
- G.711, G.723.1, and G.729 A/B Codec support
- DDNS, DHCP, PPPoE support
- Gatekeeper or proxy server support

VoIP-422R

Router H.323 FXO FXS

4-port VoIP Gateway Router

The VoIP-422R is a H.323 VoIP router with IP sharing function. It can automatically allocate bandwidth for VoIP traffic. It features 2 FXO and 2 FXS ports for up to 4 simultaneous voice/FAX channels. Software function such as hotline, DDNS, dial plan, and call transfer are all included. Configuration is available through Web, Telnet, or Console interface.

- 1 WAN + 4 LAN ports
- 2 FXS + 2 FXO port
- IP sharing router function
- Auto bandwidth allocation for VoIP
- Hotline, Call forward and transfer
- G.711, G.723.1, and G.729 A/B Codec support
- DDNS, DHCP, PPPoE support
- Gatekeeper support

ePhone-1000S

| SIP | Voice Assist | Speed Dial | Speaker Phone | Outbound | STUN |

SIP IP Phone

The ePhone-1000S is a standalone SIP based IP phone with easy-to-setup and excellent voice quality. The voice assist setup let you plug in the IP Phone directly under your router, then you can press the IP button and the phone will announce the IP address to you. It can also announces last called number, the phone's number, missed calls, gateway IP, subnet mask and more. The phone has additional feature such as speed dial, volume control, and many other additional functions. Configuration guide with popular public SIP service providers are included.

- 1 WAN port
- 1 Head Phone + 1 MIC Jack
- DHCP / Fixed IP / PPPoE mode
- Large LCD display
- Voice Assist Setup and Speaker Phone

- E.164 dial plan support
- STUN server and outbound proxy support
- G.711, G.723.1, and G.729 A/B Codec supports
- Hotline support
- Keypad and Web configuration

FREE!
AirLive to AirLive Calls

Standalone IP Phone
No Need for Computer !
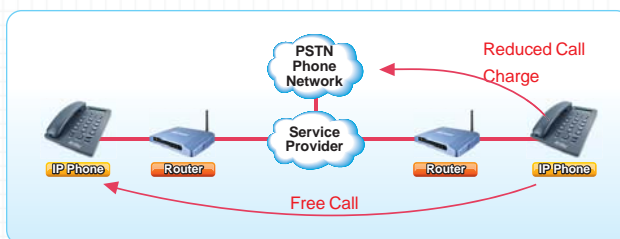
ePhone-2000S

| SIP | 3-Way Conference | Speed Dial | Speaker Phone | Outbound | STUN | SNMP |

Advanced SIP IP Phone

The ePhone-2000S is a high end IP phone with the ability to register with 3 different proxy servers at the same time. Therefore, you can receive and send phone calls to 3 different services. This means your can call friends around the world who subscribe to different SIP VoIP providers. Additional feature includes the ability to receive 2 concurrent calls and make conference phone calls. Configuration can be made using keypad, web, telnet, or SNMP software. Moreover, configuration guide with popular public SIP service providers are included.

- 1 WAN port
- DHCP / Fixed IP / PPPoE mode
- Simultaneous registration with 3 proxy services
- Large LCD display
- Speaker Phone, music on hold, speed dial, auto-redial

- E.164 dial plan support
- STUN server and outbound proxy support
- G.711, G.723.1, and G.729 A/B Codec supports
- Hotline support
- Keypad, Telnet, SNMP and Web configuration

FREE!
AirLive to AirLive Calls

3 Accounts
At the same Time !

Keep in touch with users in different service Providers !

Wireless LAN | Wireless Outdoor | Broadband | Multimedia | Ethernet Products | Security Products | Powerline | VoIP
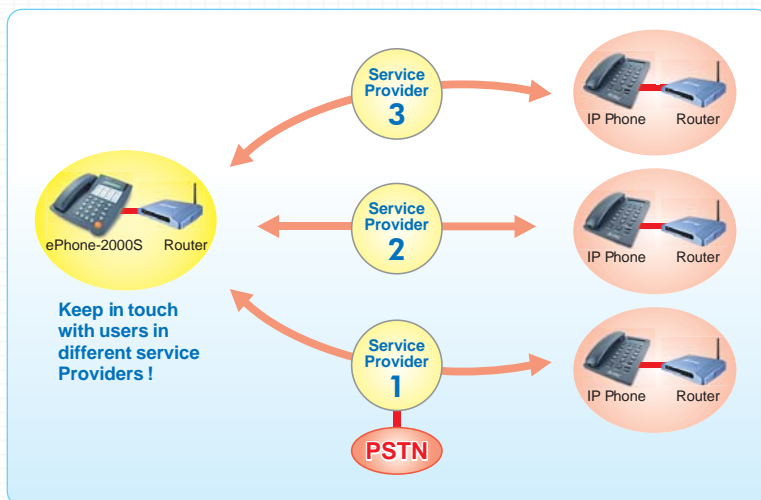
100Base-FX

The IEEE standard defines how to transmit Fast Ethernet 100Mbps data using multi-mode or single mode fiber optic cable.

100Base-TX

Also known as 802.3u. The IEEE standard defines how to transmit Fast Ethernet 100Mbps data using Cat.5 UTP/STP cable. The 100Base-TX standard is backward compatible with the 10Mbps 10-BaseT standard.

1000Base-SX

Also known as 802.3z. The IEEE standard defines how to transmit Gigabit Ethernet data using multi-mode fiber optic cables. This standard allows transmission distance of 550 meter, which is more than 5 times longer than the 100-meter limitation of 1000Base-T. The 1000Base-SX can't run in 100Mbps mode.

1000Base-LX

The IEEE standard defines how to transmit Gigabit Ethernet data using single mode fiber optic cable. This standard allows transmission distance of 5km or more using single-mode fiber. The 1000Base-SX can't run in 100Mbps mode.

1000Base-T

Also known as 802.3ab standard. The IEEE standard defines how to transmit Gigabit data through the use of Cat.5 UTP/STP cable. The 1000Base-T can run in 10/100/1000Mbps speed, and is backward compatible with 10/100Base-TX standard.

802.11a

An IEEE specification for wireless networking that operates in the 5 GHz frequency range (5.15 GHz to 5.850 GHz) with a maximum of 54 Mbps data transfer rate. The 5 GHz frequency band is not as crowded as the 2.4 GHz band. In addition, the 802.11a have 12 non-overlapping channels, comparing to 802.11b/g's 3 non-overlapping channels. This means the possibility to build larger non-interfering networks. However, the 802.11a deliver shorter distance at the same output power when comparing to 802.11g.

802.11b

International standard for wireless networking that operates in the 2.4 GHz frequency band (2.4 GHz to 2.4835 GHz) and provides a throughput up to 11 Mbps.

802.11g

A standard provides a throughput up to 54 Mbps using OFDM technology. It also operates in the 2.4 GHz frequency band as 802.11b. 802.11g devices are backward compatible with 802.11b devices.

VLAN

Virtual LAN. VLAN is used to divide a network into smaller networks to reduce the traffic and to provide security. There are 2 types of VLAN specifications for layer-2 Ethernet network

Port Based VLAN:

Define VLAN based on port number of the switch. Port based VLAN is easy to configure but often limited to one single switch

802.1Q Tag VLAN:

In 802.1Q VLAN, the VLAN information is written into the Ethernet packet itself. Each packet carries a VLAN ID(called Tag) as it traveled across the network. Therefore, the VLAN configuration can be configured across multiple switches. In 802.1Q spec, possible 4096 VLAN ID can be created. Although for most switches, they can only view in frames of 256 ID at a time.

802.3ad

802.3ad is an IEEE standard for bonding or aggregating multiple Ethernet ports into one virtual port (also known as trunking) to increase the bandwidth.

Adhoc

A Peer-to-Peer wireless network. An Adhoc wireless network do not use wireless AP or router as the central hub of the network. Instead, wireless client are connected directly to each other. The disadvantage of Adhoc network is the lack of wired interface to Internet connections. It is not recommended for network more than 2 nodes.

802.1x

802.1x is a security standard for wired and wireless LANs. In the 802.1x parlance, there are usually supplicants (client), authenticator (switch or AP), and authentication server (radius server) in the network. When a supplicants request a service, the authenticator will pass the request and wait for the authentication server to grant access and register accounting. The 802.1x is the most widely used method of authentication by WISP.
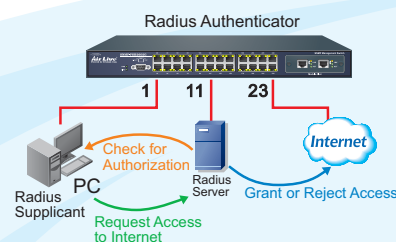
Access Point (AP)

The central hub of a wireless LAN network. Access Points have one or more Ethernet ports that can connect devices (such as Internet connection) for sharing. Multi-function Access Point can also function as an Ethernet client, wireless bridge, or repeat signals from other AP. Access Points typically have more wireless functions comparing to wireless routers.

ACK Timeout

Acknowledgement Timeout Windows. When a packet is sent out from one wireless station to the other, it will waits for an Acknowledgement frame from the remote station. The station will only wait for a certain amount of time, this time is called the ACK timeout. If the ACK is NOT received within that timeout period then the packet will be re-transmitted resulting in reduced throughput. If the ACK setting is too high then throughput will be lost due to waiting for the Ack Window to timeout on lost packets. If the ACK setting is too low then the ACK window will have expired and the returning packet will be dropped, greatly lowering throughput. By having the ability to adjust the ACK setting we can effectively optimize the throughput over long distance links. This is especially true for 802.11a and 802.11g networks. Setting the correct ACK timeout value need to consider 3 factors: distance, AP response time, and interference. Several Airlive APs provide ACK adjustment capability and are considered the best performers for long distance wireless application.

ADSL Router

ADSL router is a router with built-in ADSL modem to let many PCs sharing an ADSL connection. ADSL router has a RJ-11 interface that connects to an ADSL line directly. ADSL router can not be used on non-ADSL broadband connection.

Bandwidth Management

Bandwidth Management controls the transmission speed of a port, user, IP address, and application. Router can use bandwidth control to limit the Internet connection speed of individual IP or Application. It can also guarantee the speed of certain special application or privileged IP address - a crucial feature of QoS (Quality of Service) function. For switch's bandwidth management, please see "Rate Control".

Bridge
A product that connects 2 different networks that uses the same protocol. Wireless bridges are commonly used to link network across remote buildings.

Bluetooth
A PAN(Personal Area Network) technology based on the frequency hopping technique. Bluetooth is commonly used for wireless connectivity between consumer electronic devices such as mobile phone, PDA, and computer accessories. The Bluetooth devices are classified into 2 different categories for transmission power. The Class-1 devices have maximum transmission distance of up to 100 meters. Class-2 devices have maximum distance of up to 10 meter. The Bluetooth 1.1 spec calls for maximum bandwidth of 1Mbps (721Kbps date rate). Later, the Bluetooth 1.2 spec improves the interference issue and increase data rate to 1Mbps. The latest Bluetooth 2.0 spec improves the power consumption and introduces the faster EDR mode. EDR (Enhanced Data Rate) mode increases the bandwidth to 3Mbps (2.1Mbps data rate). Bluetooth is expected to merge with the UWB (Ultra Wide Band) standard in 2007.

Broadband Router
A device with an Ethernet WAN interface to let multiple PCs share one single broadband connection. Because the broadband router does not have built-in modem, it can connect with ADSL modem, cable modem, wireless CPE, and VDSL modem.

Client
Client means a network device or utility that receives service from host or server. A client device means end user device such as wireless cards or wireless CPE.

CPE Devices
CPE stands for Customer Premises Equipment. A CPE is a device installed on the end user's side to receive network services. For example, on an ADSL network, the ADSL modem/router on the subscriber's home is the CPE device. Wireless CPE means a complete Wireless Client device (usually an AP with built-in Antenna) that receive wireless broadband access from the WISP. The opposite of CPE is CO.

CTS
Clear To Send. A signal sent by a device to indicate that it is ready to receive data.

DDNS
Dynamic Domain Name System. An algorithm that allows the use of dynamic IP address for hosting Internet Server. A DDNS service provides each user account with a domain name. A router with DDNS capability has a built-in DDNS client that updates the IP address information to DDNS service provider whenever there is a change. Therefore, users can build website or other Internet servers even if they don't have fixed IP connection.

DHCP
Dynamic Hosting Configuration Protocol. A protocol that enables a server to dynamically assign IP addresses. When DHCP is used, whenever a computer logs onto the network, it automatically gets an IP address assigned to it by DHCP server. A DHCP server can either be a designated PC on the network or another network device, such as a router.

DMZ
Demilitarized Zone. When a router opens a DMZ port to an internal network device, it opens all the TCP/UDP service ports to this particular device. The feature is used commonly for setting up H.323 VoIP or Multi-Media servers.

DNS
A program that translates URLs to IP addresses by accessing a database maintained on a collection of Internet servers.

Domain Name
The unique name that identifies an Internet site. Domain Names always have 2 or more parts, separated by dots. In www.airlive.com, the "airlive.com" is the doman name.

DoS Attack
Denial of Service. A type of network attack that floods the network with useless traffic. Many DoS attacks, such as the Ping of Death and Teardrop attacks, exploit limitations in the TCP/IP protocols.

Encryption
Encoding data to prevent it from being read by unauthorized people.

ESSID (SSID)
The identification name of an 802.11 wireless network. Since wireless network has no physical boundary liked wired Ethernet network, wireless LAN needs an identifier to distinguish one network from the other. Wireless clients must know the SSID in order to associate with a WLAN network. Hide SSID feature disable SSID broadcast,
so users must know the correct SSID in order to join a wireless network.

Firewall
A system that secures a network and prevents access by unauthorized users. Firewalls can be software, router, or gateway. Firewalls can prevent unrestricted access into a network, as well as restricting data from flowing out of a network.

Firmware
The program that runs inside embedded device such as router or AP. Many network devices are firmware upgradeable through web interface or utility program.

FTP
File Transfer Protocol. A standard protocol for sending files between computers over a TCP/IP network and the Internet.

Full Duplex
The ability of a networking device to receive and transmit data simultaneously.

FXS
An analogue VoIP CPE interface. The FXS ports connect to your ordinary telephone or FAX. Using your telephone or FAX, your can dial out through the gateway to other VoIP gateway or IP Phone.

FXO
An analogue VoIP CO interface. The FXO ports connect to the PSTN line (analogue telephone line) or PBX line (the line to the extension phone). It allows the VoIP device to communicate with the ordinary telephone system. Having the PXO port is necessary if you want your device to link with PBX or outside telephone line.

Gateway
In the global Internet network, the gateways are core routers that connect networks in different IP subnet together. In a LAN environment with an IP sharing router, the gateway is the router. In an office environment, gateway typically is a multi-function device that integrates NAT, firewall, bandwidth management, and other security functions.

Hotspot

A place where you can access Wi-Fi service. This can be for free or for a fee. HotSpots can be inside a coffee shop, airport lounge, train station, convention center, hotel or any other public meeting area. In a hotspot system, a service provider typically need an authentication and account system for billing purposes.

IGMP Snooping

Internet Group Management Protocol (IGMP) is a Layer 3 protocol to report IP multicast memberships to neighboring multicast switches and routers. IGMP snooping is a feature that allows an Ethernet switch to "listen in" on the IGMP conversation between hosts and routers. A switch support IGMP snooping has the possibility to avoid multicast traffic being treated as broadcast traffic. Therefore, reducing the overall traffic on the network.

Infrastructure Mode

A wireless network that is built around one or more access points, providing wireless clients access to wired LAN or Internet service. The opposite of Infrastructure mode is Adhoc mode.

IP address

IP (Internet Protocol) is a layer-3 network protocol that is the basis of all Internet communication. An IP address is 32-bit number that identifies each sender or receiver of information that is sent across the Internet. An IP address has two parts: an identifier of a particular network on the Internet and an identifier of the particular device (which can be a server or a workstation) within that network. The new IPv6 specification supports 128-bit IP address format.

IPsec

IP Security. A set of protocols developed by the IETF to support secure exchange of packets at the IP layer. IPsec has been deployed widely to implement Virtual Private Networks (VPNs). IPsec supports two encryption modes: Transport and Tunnel. Transport mode encrypts only the data of each packet, but leaves the header untouched. The more secure Tunnel mode encrypts both the header and the payload. On the receiving side, an IPSec-compliant device decrypts each packet.

ITSP

Internet Telephony Service Provider. An ITSP is typically a service provider that provides voice communication through VoIP technology.

KVM

Keyboard Video Mouse. A KVM switch is a device that allow user to control 2 or more PCs using one set of Keyboard, Monitor, and Mouse. Some KVM switches even allow speaker and microphone to be shared.

LACP (802.3ad) Trunking

The 802.3ad Link Aggregation standard defines how to combine the several Ethernet ports into one high-bandwidth port to increase the transmission speed. It is also known as port trunking. Both device must set the trunking feature to work.

MAC

Media Access Control. MAC address provides layer-2 identification for Networking Devices. Each Ethernet device has its own unique address. The first 6 digits are unique for each manufacturer. When a network device have MAC access control feature, only the devices with the approved MAC address can connect with the network.

Mbps

Megabits Per Second. One million bits per second; a unit of measurement for data transmission

MESH

Mesh is an outdoor wireless technology that uses Spanning Tree Protocol (STP) and Wireless Distribution system to achieve self-forming, self-healing, and self-configuring outdoor network. MESH network are able to take the shortest path to a destination that does not have to be in the line of site.
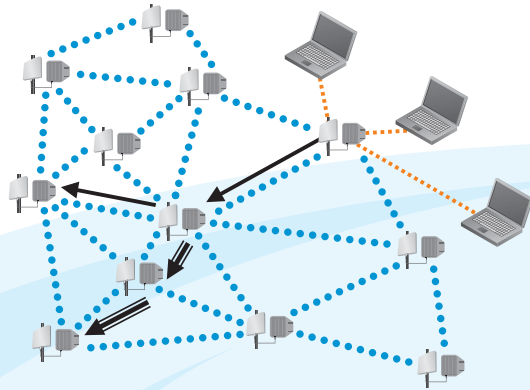
MIMO

Multi In Multi Out. A Smart Antenna technology designed to increase the coverage and performance of a WLAN network. In a MIMO device, 2 or more antennas are used to increase the receiver sensitivity and to focus available power at intended Rx.

MiniGBIC

A type of Gigabit Ethernet module interface that uses SFP(Small Form Factor Pluggable) connectors. The MiniGBIC equipped switches typically comes with the MiniGBIC slot for optional SFP optical transceivers.

NAT

Network Address Translation. A network algorithm used by Routers to enables several PCs to share single IP address provided by the ISP. The IP that a router gets from the ISP side is called Real IP, the IP assigned to PC under the NAT environment is called Private IP.

Node

A network connection end point, typically a computer.

Packet

A unit of data sent over a network.

Passphrase

Used much like a password, a passphrase simplifies the WEP encryption process by automatically generating the WEP encryption keys for the company products.

POE

Power over Ethernet. A standard to deliver both power and data through one single Ethernet cable (UTP/STP). It allows network device to be installed far away from power source. A POE system typically compose of 2 main component: DC Injector (Base Unit) and Splitter(Terminal Unit). The DC injector combines the power and data, and the splitter separates the data and power back. The IEEE 802.3af is a POE spec that uses 48 volt to deliver power up to 100 meter distance.

Port

This word has 2 different meaning for networking.

- The hardware connection point on a computer or networking device used for plugging in a cable or an adapter.
- The virtual connection point through which a computer uses a specific application on a server.

PPPoE
Point-to- Point Protocol over Ethernet. PPPoE relies on two widely accepted standards: PPP and Ethernet. PPPoE is a specification for connecting the users on an Ethernet to the Internet through a common broadband medium, such as a single DSL line, wireless device or cable modem.

PPTP
Point-to-Point Tunneling Protocol: A VPN protocol developed by PPTP Forum. With PPTP, users can dial in to their corporate network via the Internet. If users require data encryption when using the Windows PPTP client, the remote VPN server must support MPPE (Microsoft Point-To-Point Encryption Protocol) encryption. PPTP is also used by some ISP for user authentication, particularly when pairing with legacy Alcatel / Thomson ADSL modem.

Powerline
A technology that uses electricity lines as a media for building tnetworks. The powerline devices uses electricity circuit inside a building for transmission data, therefore, there is no need for network cables. The Homplug Alliance is the committee that defines Powerline standards.

Rate Control
Ethernet switches' function to control the upstream and downstream speed of an individual port. Rate Control management uses "Flow Control" to limit the speed of a port. Therefore, the Ethernet adapter must also have the flow control enabled. One way to force the adapter's flow control on is to set a port to half-duplex mode.

RADIUS
Remote Authentication Dial-In User Service. An authentication and accounting system used by many Internet Service Providers (ISPs). When you dial in to the ISP, you must enter your username and password. This information is passed to a RADIUS server, which checks that the information is correct, and then authorizes access to the ISP system. Radius typically uses port 1812 and port 1813 for authentication and accounting port. Though not an official standard, the RADIUS specification is maintained by a working group of the IETF.

Router
An IP sharing router is a device that allows multiple PCs to share one single broadband connection using NAT technology. A wireless router is a device that combines the functions of wireless Access Point and the IP sharing router.

RTS
Request To Send. A packet sent when a computer has data to transmit. The computer will wait for a CTS (Clear To Send) message before sending data.

RJ-45
Standard connectors for Twisted Pair copper cable used in Ethernet networks. Although they look similar to standard RJ-11 telephone connectors, RJ-45 connectors can have up to eight wires, whereas telephone connectors have only four.


```
1 White-Green
2 Green
3 White-Orange
4 Blue
5 White-Blue
6 Orange
7 White-Brown
8 Brown
```
568A CABLE END

```
1 White-Orange
2 Orange
3 White-Green
4 Blue
5 White-Blue
6 Green
7 White-Brown
8 Brown
```
568B CABLE END

Interface Cable Wiring
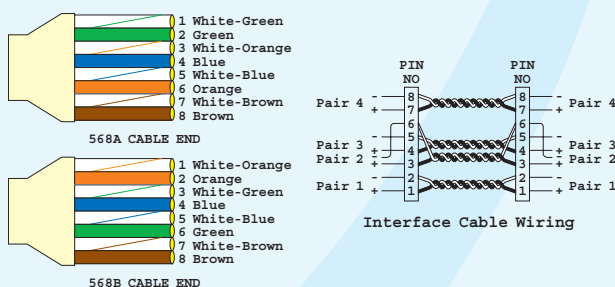
SNMP
Simple Network Management Protocol. A set of protocols for managing complex networks. The SNMP network contains 3 key elements: managed devices, agents, and network-management systems (NMSs). Managed devices are network devices that content SNMP agents. SNMP agents are programs that reside SNMP capable device's firmware to provide SNMP configuration service. The NMS typically is a PC based software such as HP Openview that can view and manage SNMP network device remotely.

SOHO
Small Office/Home Office. A term generally used to describe an office or business with ten or fewer computers and/or employees.

SSH
Developed by SSH Communications Security Ltd., Secure Shell is a program to log into another computer over a network, to execute commands in a remote machine, and to move files from one machine to another. It provides strong authentication and secure communications over insecure channels. It is a replacement for rlogin, rsh, rcp, and rdist.

SSL
Secure Sockets Layer. Commonly used encryption scheme used by many online retail and banking sites to protect the financial integrity of transactions. When an SSL session begins, the server sends its public key to the browser. The browser then sends a randomly generated secret key back to the server in order to have a secret key exchange for that session. SSL VPN is also known as Web VPN.

Subnet Mask
An address code mask that determines the size of the network. An IP subnet are determined by performing a BIT-wise AND operation between the IP address and the subnet mask. By changing the subnet mask, you can change the scope and size of a network.

Subnetwork or Subnet
Found in larger networks, these smaller networks are used to simplify addressing between numerous computers. Subnets connect to the central network through a router, hub or gateway. Each individual wireless LAN will probably use the same subnet for all the local computers it talks to.

TCP
A layer-4 protocol used along with the IP to send data between computers over the Internet. While IP takes care of handling the actual delivery of the data, TCP takes care of keeping track of the packets that a message is divided into for efficient routing through the Internet.

UDP
User Datagram Protocol. A layer-4 network protocol for transmitting data that does not require acknowledgement from the recipient of the data.

Upgrade
To replace existing software or firmware with a newer version.

Upload
To send a file to the Internet or network device.

URL
Uniform Resource Locator. The address of a file located on the Internet.

VoIP

Voice transmission using Internet Protocol to create digital packets distributed over the Internet. Using VoIP can be less expensive than voice transmission using standard analog packets over POTS (Plain Old Telephone Service).

VPN

Virtual Private Network. A type of technology designed to increase the security of information transferred over the Internet. VPN creates a private encrypted tunnel from the end user's computer, through the local wireless network, through the Internet, all the way to the corporate network.

Walled Garden

On the Internet, a walled garden refers to a browsing environment that controls the information and Web sites the user is able to access. This is a popular method used by ISPs in order to keep the user navigating only specific areas of the Web

WAN

Wide Area Network. A communication system of connecting PCs and other computing devices across a large local, regional, national or international geographic area.

WEP

Wired Equivalent Privacy. A wireless encryption protocol. WEP is available in 40-bit (64-bit), or in 108-bit (128-bit) encryption modes.

Wi-Fi

Wireless Fidelity. An interoperability certification for wireless local area network (LAN) products based on the IEEE 802.11 standards. The governing body for Wi-Fi is called Wi-Fi Alliance (also known as WECA).

WiMAX

Worldwide Interoperability for Microwave Access. A Wireless Metropolitan Network technology that complies with IEEE 802.16 and ETSI Hiperman standards. The orginal 802.16 standard call for operating frequency of 10 to 66Ghz spectrum. The 802.16a amendment extends the original standard into spectrum between 2 and 11 Ghz. 802.16d increase data rates to between 40 and 70 Mbps/s and add support for MIMO antennas, QoS, and multiple polling technologies. 802.16e adds mobility features, narrower bandwidth (a max of 5 mhz), slower speed and smaller antennas. Mobility is allowed up to 40 mph. The Telecom vendors are expected to finish the interoperability test by the end of 2006. The WiMAX is expected to challenge the ADSL and 3G communication market in 2007.

WDS

Wireless Distribution System. WDS defines how multiple wireless Access Point or Wireless Router can connect together to form one single wireless network without using wired uplinks. WDS associate each other by MAC address, each device

WLAN

Wireless Local Area Network. A type of local-area network that uses high-frequency radio waves rather than wires to communicate between nodes. The most popular standard for WLAN is the 802.11 standards.

WMS

Wireless Management System. An utility program to manage multiple wireless AP/Bridges.

WPA

Wi-Fi Protected Access. It is an encryption standard proposed by WiFi for advance protection by utilizing a password key (TKIP) or certificate. It is more secure than WEP encryption.

	AirLive WN-5000R-USB	Good Selection award from Noticias3d.com in Spain	2008
	AirLive WLA-9000AP	Award ChipTipp in Chip magazine in Hungary	2008
	AirLive WFP-101U	Our Choice award in ComputerTotaal magazine in The Netherlands	2008
	AirLive WL-5470AP	Vitaz testu in magazine PC Revue in Slovakia	2008
	AirLive WL-1500R	Tip Redakcie in magazine PC Revue in Slovakia	2008
	AirLive WL-5470AP	Silver Award in HW Magazine in Philippines	2008
	AirLive Airvideo-2000	Digital OK from magazine Digital in Serbia	2008
	AirLive WMU-6500FS	Silver Award from Silenthardware.de in Germany	2008
	AirLive WMU-6500FS	Click TIP! In magazine Click! in Czech Republic	2008
	AirLive WN-5000R	PCPraxis Preistipp! In magazine PC Praxis! in Germany	2008
	AirLive WMU-6500FS	Preferred Choice! on Computer Idea magazine in Italy	2008
	AirLive WL-5470AP	Editors' Recommended! on Noticias3d in Spain	2008
	AirLive WMU-6500FS	Editors' Recommended! on Noticias3d in Spain	2008
	AirLive WMU-6500FS	Approved! on website Insidehw in Serbia	2008
	AirLive WT-2000AP	Editors' Recommend! on PC Magazine in UAE	2008

	AirLive WL-5460CAM	Editors' Recommended! on Techpowerup.co.uk in UK	2008
	AirLive WMU-6500FS	Great Innovation! on Hardwarelogic.com in USA	2007
	AirLive MU-7000AVs	Editors' Recommend! Doporucujeme on Pretaktovani.cz in Czech	2007
	AirLive Sky-211	Editors' Recommended at Techpowerup.com in UK	2007
	AirLive Skyphone-1000	Editors' Choice at Techpowerup.com in UK	2007
	AirLive Skyphone-1000	Editors' Choice at Techpowerup.com in UK	2007
	AirLive WMU-6500FS	PC World Recommended in PC World magazine Philippines	2007
	AirLive MU-7000	Good Product on Toxico PC in Argentina	2007
	AirLive WMM-3000AP	Award in test in Computer magazine in Czech	2007
	AirLive WMU-6500FS	Silver award from Hardware Magazine in Philippines	2007
	AirLive WMU-6500FS	Month in PC Magazine in Russia	2007
	AirLive WMU-6500FS	Editor's Recommended! In Digital OK in Russia	2007
	AirLive WMU-6500FS	Hit Product in Svethardware.cz in Czech	2007
	AirLive WL-5420CAM	Test Winner! For Price/performance in PC Revue Slovakia	2007
	AirLive WMU-6500FS	Editor's RECOMMENDED in Techpowerup.com in the UK	2007

Product Index